

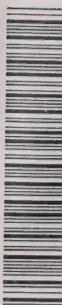
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# Navigation Conditions on the Hudson Bay Route from the Atlantic Seaboard to Port Churchill

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SEASON OF NAVIGATION

1938

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DEPARTMENT OF TRANSPORT

HON. C. D. HOWE, Minister

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OTTAWA

J. O. PATENAUDE, I.S.O.

PRINTER TO THE KING'S MOST EXCELLENT MAJESTY

1938

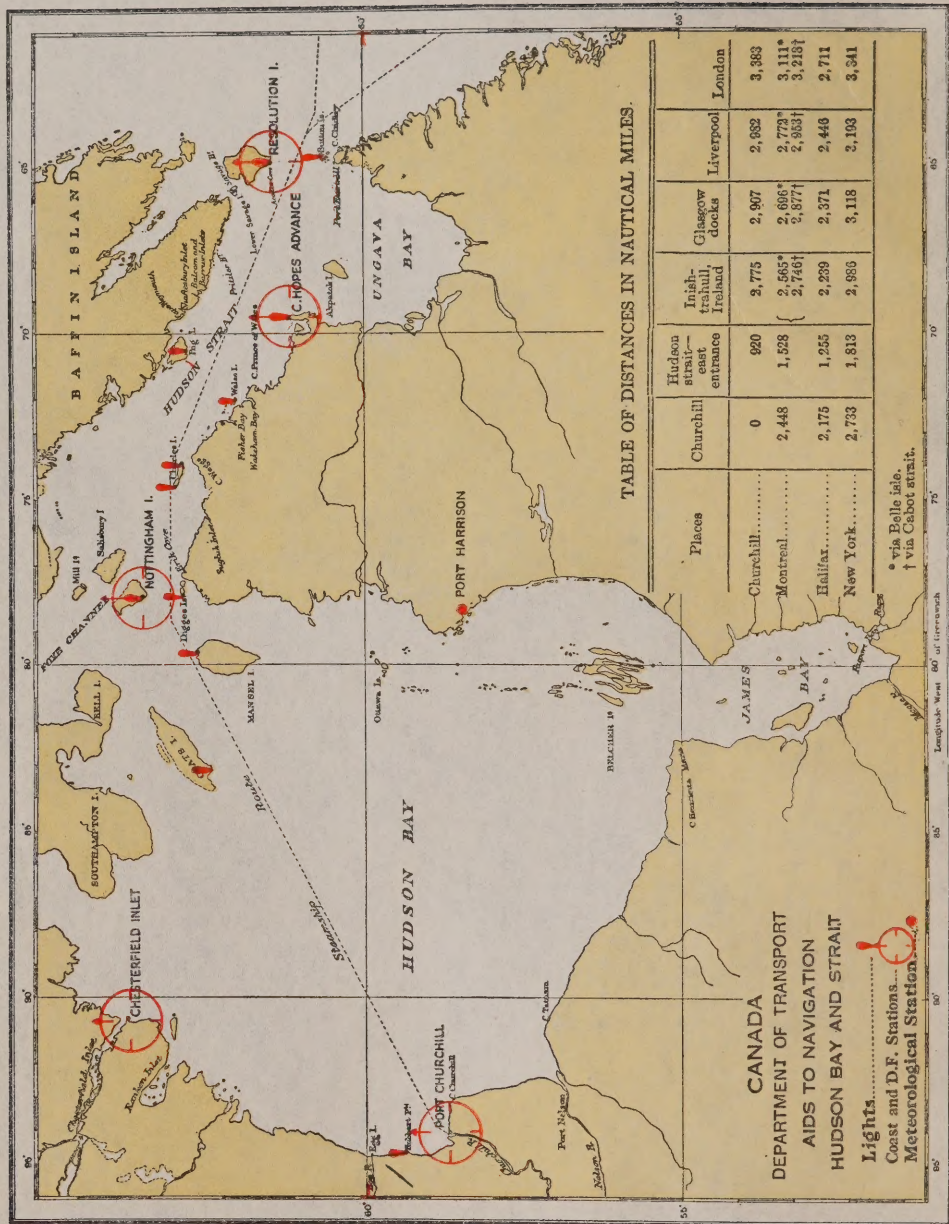
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## CONTENTS

	PAGE
Introductory Letter.....	4
Synopsis of Report—	
Navigation Conditions.....	5
Foxe Channel Ice.....	7
Fog.....	7
Aids to Navigation.....	7
Shipping.....	8
Ships' Reports—	
C.G.S. <i>N. B. McLean</i> .....	9
C.G.S. <i>Ocean Eagle</i> .....	11
R.M.S. <i>Nascopie</i> .....	13
M.V. <i>M.F. Therese</i> .....	15
Mercantile Vessels—Movements.....	16
Port Churchill—Exports.....	16
Traffic.....	16
Hydrographic Information.....	16
Charts.....	17
Meteorological Reports—	
C.G.S. <i>N. B. McLean</i> .....	18
Resolution Island Radio Station.....	20
Cape Hopes Advance Radio Station.....	24
Nottingham Island Radio Station.....	26
Port Churchill Radio Station.....	30
Chesterfield Inlet Radio Station.....	36
Port Harrison Radio Station.....	42
Aids to Navigation—	
Radio—Coast and D.F. Stations.....	48
Patrol Ship <i>N.B. McLean</i> .....	48
Port Harrison Meteorological Reporting Station.....	49
Navigation Lights.....	49
C.G.S. <i>N. B. McLean</i> —Dimensions and Equipment.....	50
Glossary of Ice Navigation Terms.....	51

## ILLUSTRATIONS

Chart of Hudson Bay and Strait.....	Frontispiece
Wharf and grain elevator, Port Churchill.....	Facing page 8
S.S. <i>Firby</i> outward bound, Port Churchill.....	“ “ 16

V. I. SMART, Esq.,  
Deputy Minister, Department of Transport,  
Ottawa, Ontario.

DEAR SIR—I have the honour to submit a report on navigation conditions on the Hudson Bay Route from the Atlantic seaboard to Port Churchill, for the season of navigation, 1938.

The report is compiled from information received from the Department of Transport vessels *N. B. McLean* and *Ocean Eagle*, the Hudson's Bay Company R.M.S. *Nascopie*, the Roman Catholic Mission motor vessel *M. F. Therese*, the National Harbours Board, the Hydrographic and Map Service of the Department of Mines and Resources, and from the Meteorological and Radio Services of the Department of Transport.

Yours respectfully,

C. P. EDWARDS,  
*Chief of Air Services.*

DEPARTMENT OF TRANSPORT,  
OTTAWA, DECEMBER 27, 1938.



# Navigation Conditions on the Hudson Bay Route from the Atlantic Seaboard to Port Churchill, Season of Navigation, 1938

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## Synopsis of Report

### NAVIGATION CONDITIONS—OPENING OF NAVIGATION

#### *Hudson Strait, East End*

##### *Resolution Island*

July 11.....Close packed ice in all directions.  
 July 14.....Scattered ice in all directions.  
 July 20.....Few pieces scattered ice.  
 July 26.....Scattered ice in all directions.  
 August 1.....Open water in all directions.  
 August 7-16.....Scattered pieces of ice reported.  
 August 17.....No field ice reported on and after this date.

#### HUDSON STRAIT, CENTRAL

##### *Cape Hopes Advance*

Radio Station was closed on September 27, 1937, and reopened September 27, 1938, ice conditions at opening of navigation being unobserved.

#### HUDSON STRAIT, WEST END

##### *Nottingham Island*

July 9.....Close packed ice in all directions.  
 July 14.....Widely scattered ice in all directions.  
 July 21.....Few small pieces of ice visible.  
 July 22.....No ice reported on and after this date.

#### HUDSON STRAIT

##### *C.G.S. N. B. McLean*

This vessel was not in Hudson Strait at the time of opening of navigation.

#### HUDSON BAY

##### *Port Churchill*

July 4.....Large body of ice visible on northeastern horizon.  
 July 5.....No ice reported on and after this date.

##### *Chesterfield Inlet*

July 2.....Packed ice in all directions.  
 July 4.....Scattered patches of ice in all directions.  
 July 7.....No ice reported on and after this date.

*Tug "Ocean Eagle"**First Voyage*

No ice patrols were carried out this year by the *Ocean Eagle* but on a voyage from Churchill to Chesterfield (July 14 to 16) field ice was encountered about fifty miles east of cape Eskimo and the edge of the pack was followed for thirty-five miles. During the return trip from Chesterfield, from July 19 to 21, the ice pack was met one hundred and thirty miles and thirty degrees from Churchill, the edge of which was followed to a point sixty miles and seventeen degrees true from Churchill.

*Second Voyage*

The *Ocean Eagle* left Churchill July 30 to transport supplies to Hudson Strait wireless stations and encountered no ice in the bay. The first field ice seen was on August 8, on the shipping track in Hudson strait eighty miles west of Resolution, it being necessary to alter course to the southward to clear the pack and proceed to Resolution radio station. No field ice was met on the return trip through the strait and bay enroute to Churchill, being from August 19th to 26th.

## NAVIGATION CONDITIONS—CLOSE OF NAVIGATION

## HUDSON BAY

*Chesterfield Inlet*

October 23.....Ice forming along shore.  
 October 30.....Cove full of slob ice.  
 November 5.....Slob ice extends half mile off shore.  
 November 11.....Slob ice extends to horizon.  
 November 12.....Close packed ice to horizon.

*Port Churchill*

October 29.....River frozen three miles above mouth.  
 November 8.....Large body of slob ice in river.  
 November 11.....Drift ice in bay.  
 November 15.....Much broken ice in bay.  
 November 20.....Ice extends to horizon.

*Port Harrison*

November 2.....Slob ice in river.  
 November 5.....Cove frozen over.  
 November 6-22.....Varying ice conditions.  
 November 23.....River frozen.

## HUDSON STRAIT, WEST END

*Nottingham Island*

October 24.....Slob ice in cove.  
 October 30.....Cove frozen over.  
 November 11.....String of ice on horizon.  
 November 30.....Ice on southwest horizon.

## HUDSON STRAIT, CENTRAL

*Cape Hopes Advance*

Station closed from October 11, 1938. No field ice observed before this date.



## HUDSON STRAIT, EAST END

*Resolution Island*

November 11.....Few scattered pieces ice.  
 November 19.....Few strings of light slob ice.  
 November 23.....Strings of light ice in all directions.  
 November 30.....Loose ice in all directions.

## FOX CHANNEL ICE

Conditions between Nottingham and Digges island were exceptionally good during the season of 1938. The master of the M.S. *Therese*, however, reported seeing a large field of ice between Nottingham island and Leyson point, Southampton island, while the vessel was en route from Repulse bay to Nottingham September 8-11. A few scattered pieces of ice were seen eighteen miles north of Mansel island on September 28 from the *N. B. McLean*.

## FOG

The hours of fog reported by the Wireless Stations were as follows:—

	July	August	September	October	November
Resolution island.....	225	141	220	66	0
Cape Hopes Advance*.....			0	0	
Nottingham island.....	50	61	76	34	0
Port Churchill.....	9	57	41	64	4
Chesterfield inlet.....	26	30	74	30	0
Port Harrison.....	110	36	62	35	0

\* Reopened September 27; closed October 11.

## AIDS TO NAVIGATION

*Radio*

The five direction finding stations in Hudson Bay and strait were in operation throughout the whole year with the exception of cape Hopes Advance, which was in commission from September 27 to October 11 only. Radio stations at Churchill, Chesterfield and Resolution island were calibrated by the *Ocean Eagle* with good results and the Nottingham calibration was also checked by the same vessel. The station at cape Hopes Advance was calibrated by the *N. B. McLean*.

The direction finding bearings furnished to ships by the five direction finding radio stations totalled 516.

Detailed information regarding the radio stations is given on page 48.

*Hydrographic*

Particulars of the latest Hydrographic information pertaining to Hudson bay and strait will be found in pages 16 to 17, also a list of charts and other publications connected with navigation on the Hudson Bay Route, issued by the Hydrographic and Map Service, Department of Mines and Resources.

*Lights*

There are two watched and ten unwatched lights, a total of twelve, on the Hudson Bay Route, no new lights having been erected this year. A list of the lights is given on page 49.

### *Fog Signals*

An explosive bomb fog signal is located at Resolution island light. The bomb is fired at intervals of ten minutes on request by ships approaching this vicinity.

## SHIPPING

Three mercantile vessels traversed the Hudson Bay Route this season, these ships being berthed at port Churchill and cleared with cargoes of wheat. This compares with two ships entering port Churchill during the 1937 season.

The S.S. *Daleby* entered the Strait on September 21 and cleared the Strait outward bound October 2, the S.S. *Rudby* entered on September 24, passing outward October 7, and the S.S. *Gullpool* entered September 27, passing outward October 13.

Other ships to use the route were the Hudson's Bay Company R.M.S. *Nascopie*, the Department of Transport icebreaker *N.B. McLean* and the National Harbours Board tug *Ocean Eagle*.

Smaller vessels visiting these waters during the season of 1938 were the Roman Catholic Mission motor vessel *Therese*, the Ungava Trading Company motor vessel *Bearcat* and the schooner *MacKenzie King*.

The *N. B. McLean* arrived off Resolution September 24, from whence she proceeded to cape Hopes Advance to land operators and supplies at this radio station. The first grain ship to arrive, the *Rudby* was escorted through the strait by the *Ocean Eagle*, the remaining ships being escorted by the *McLean*.

There were no disasters or casualties of any nature reported during the year.

C. P. EDWARDS,  
*Chief of Air Services.*





WHEAT AND GRAIN ELEVATOR, PORT CHARLOTTE





C.G.S. *N. B. McLEAN*, CAPTAIN W. J. BALCOM, MASTER,  
VOYAGE TO HUDSON STRAIT AND BAY, 1938

EXTRACTS FROM MASTER'S REPORT

GENERAL

The C.G.S. *N. B. McLean* sailed from Quebec at 5.55 a.m., September 18, on her ninth annual voyage to Hudson strait. This was in the nature of an emergency voyage and as the ship was practically laid up when the orders were issued on September 13 much work was required to get her ready. She carried 5,080 bags of bunker coal for the C.G.S. *Ocean Eagle*, operators and supplies for cape Hopes Advance radio station and lighthouse equipment.

Fine weather was experienced and good speed maintained, ship arriving in Hudson strait at midnight, September 22. On September 24, SS. *Rudby* arrived at entrance of the strait. The *McLean* met her off Resolution and conveyed her to a position 50 miles north of cape Hopes Advance where we left her at 1.15 p.m. and proceeded to the radio station at cape Hopes Advance. On September 26 operators and supplies were landed at the radio station and radio engineer Risteen and carpenter Taverner of the *McLean* having been landed by the *Ocean Eagle* some days previous, the station was practically ready, so calibration was carried out and the station was on the air that evening, the *McLean* leaving for the western part of the strait. A heavy northwest gale was experienced that night, ship making good weather through it.

Early next morning, September 27, the SS. *Rudby* reported he had met ice north of Mansel island, therefore, instead of bunkering the *Ocean Eagle* at Wakeham bay as intended we proceeded westward to the position where ice was reported. On arrival there only a small string and a few isolated pieces of old wasted ice were found and on September 28 proceeded to Mansel island and put the light in operation. This is a very important light along the route and with the prospects of ice around it becomes very necessary.

From Mansel island we proceeded to investigate ice conditions to northward of Digges and westward of Nottingham island and on September 29 went from Digges island northwestward to a point 30 miles east of cape Pembroke, Coates island and thence to the radio station at Nottingham island, no ice nor any indication of ice being seen. We arrived at the anchorage off radio station at 6.00 p.m. and sent ashore some mail and packages brought from Quebec. We lay at anchor off Nottingham all night and left at daylight to meet the SS. *Daleby*. The Master of the *Daleby* having requested me to accompany him all night, I did so, the weather being thick with snow-squalls. I left him after daybreak and proceeded to Sugluk to give coal to *Ocean Eagle* which was anchored there.

We arrived at Sugluk at 3.00 p.m. and the *Ocean Eagle* came alongside but later in the evening the wind increased to a gale and she was forced to leave and go to anchor. This gale continued all day Sunday, October 2, but on Monday the wind had died down and we continued bunkering, finishing Tuesday afternoon. The following morning, October 5, I sailed at 11.00 a.m. to meet the SS. *Rudby*, whom we accompanied almost to cape Hopes Advance.

The SS. *Rudby* carried mail for us and as the sea was too rough to launch a boat it was placed in a water-tight drum, thrown overboard and picked up. We left her at 9.15 a.m. and proceeded to Wakeham bay for fresh water, arriving there the evening of October 6. All the next day we worked trying to get fresh water but our pumps broke down and we had to give it up, succeeding only in getting one and one-half boat loads. Early Saturday, conditions being favourable at cape Hopes Advance, we proceeded there.

We returned to Wakeham bay that evening, arriving there at daybreak Sunday, October 9, and lay there until Tuesday, October 11, when we left to meet the SS. *Cullpool*, who was making poor progress under two boilers. We met this ship Tuesday afternoon and proceeded eastward with her. The sea being rough we waited until 1.00 a.m. the next morning when we launched a dory and took off mail. When fifty miles north of the radio station at cape Hopes Advance we parted company with the *Cullpool* and proceeded to the radio station. Orders having been received to close cape Hopes Advance station and proceed to Quebec, we took off personnel that night, closed the station and proceeded to Resolution island where we arrived at 8.30 a.m. Thursday, October 13.

All ships being clear of the strait and all work completed, the *McLean* sailed for Quebec at 2.45 p.m. October 14. Strong southeast winds with rough sea was experienced for the first thirty hours, then weather improved and without further incident the ship arrived and docked at Quebec at noon, October 19.

### ICE CONDITIONS

Ice conditions in Hudson bay and strait were the best in years. Foxe channel ice did not make an appearance off Wolstenholme last fall until November 10 and left this spring on June 20. Reports from the *Ocean Eagle* which left Churchill July 28 and crossed the bay to Nottingham arriving August 3, and then through the strait to Resolution arriving August 10, would indicate that the route was practically clear of any pan ice at that time and bergs in the eastern end of the straits were less numerous than in other years.

The *McLean* arrived off the entrance to Hudson strait midnight September 22 and on our various trips throughout the strait saw no pan ice except a small string, much wasted, and a few scattered pieces 18 miles north of Mansel island on September 28. This ice was sighted by the SS. *Rudby* and reported as considerable but on investigation was found to be as described. It was not Foxe channel ice but had probably come from north of Coates island where it has laid in some bay since the spring.

The *McLean* investigated conditions northward to 60 miles 270 degrees from Nottingham radio station and saw no indications of ice from Foxe basin and no ice had been reported from Nottingham when the *McLean* left the straits on October 14; this station gives positive information of the approach of ice from the north. The history of this station shows that this ice is always sighted there before it gets down into the steamer route off Digges island. Remarkably few bergs were sighted in the strait this fall.

### SHIPPING

Three large cargo ships with a gross tonnage of 14,356 tons passed inward and outward of Hudson strait this season. The ships in order of arrival were the SS. *Daleby*, *Rudby* and *Cullpool*. All were British ships of the Ropner Steamship Company and carried full cargoes of grain outward. The total number of bushels amounted to 916,913.

Although these ships were all fitted with Brown's gyro compasses they were given convoy service by either the *McLean* or the *Ocean Eagle*. Messages were received from the masters of these ships showing their appreciation of the services rendered. Other ships to visit Hudson strait this year were the SS. *Nascopie*, the R.C. Mission MV *Therese*, the schooner *Mackenzie King* and the MV *Bearcat*, all of which reported excellent weather and ice conditions.



C.G.S. *OCEAN EAGLE*, CAPTAIN W. A. POOLE, MASTER,  
HUDSON BAY AND STRAIT, 1938, ICE REPORT

Date	Position Noon		Wind		Temperature		State of Ice
	Lat. N.	Long. W.	Dir.	Force	Air	Sea	
1938					°F.	°F.	
July 15	60-08	90-20	N.	3	53	45	Field ice from Lat. 60-40 N. Long. 92-40 W. to Lat. 61-15 N. Long. 92-30 W.
16	62-42	90-10	NNE.	2	52	41	Anchored at Chesterfield at 5.05 p.m.
20	60-53	91-55	NW.	4	52	41	Field ice from 60-40 N. Long. 92-05 W. to Lat. 60-25 N. Long. 93-10 W. to Lat. 59-46 N. Long. 93-85 W.
Aug. 7	62-13	70-50	NW.	4	42	42	Sighted number of bergs and growlers along track.
8	61-16	66-48	Var.	2	47	36	Met loose field ice. Lat. 61-50 N. Long. 67-30 W. extending to Lat. 61-27 N. Long. 67-20 W. and a number of ice bergs and growlers.
9	At Acadia cove		Calm	.....	44	32	Acadia cove full of ice. One large berg aground in western entrance and one small berg aground in eastern entrance, numerous ice bergs drifting back and forth with the tide in the offing.
18	Off Acadia cove calibrating wireless station		Calm	.....	52	32	Sighted large number of bergs and growlers.
19	61-18	90-02	Var.	2	54	40	Sighted number of bergs and growlers on track to Hopes Advance.
20	Wales island		NW.	4	44	38	No ice.
21	Charles island and Eric cove.		ENE.	6	46	39	"
22	62-45	78-30	Var.	2	46	38	"
23	62-14	81-27	W.	6	48	44	"
24	60-58	85-42	NW.	4	48	47	"
25	59-42	89-34	NW.	6	49	48	"
26	59-12	93-10	NW.	4	48	48	"
Sept. 1	59-06	86-26	NW.	5	46	44	No ice.
2	58-25	80-00	NE.	7	43	43	"
7	58-30	80-32	NW.	5	48	42	"
7	58-45	86-16	NW.	6	46	44	"
14	59-00	93-29	N.	5	45	44	"
15	60-44	88-30	N. by N.	6	43	44	"
16	61-44	83-35	NNE.	6	36	40	"
17	62-33	80-20	NE.	5	38	37	"
18	62-05	72-00	W.	3	43	34	"
19	61-12	69-15	SW.	4	40	38	Sighted 5 bergs on track towards Resolution.
20	61-16	65-30	NNW.	6	35	32	Sighted 4 bergs and 1 growler off Resolution.
21	61-55	68-21	SW.	5	36	32	Escorting SS. <i>Daleby</i> . No ice.
22	60-50	74-21	SW.	2	38	34	Dense fog.
23	63-80	78-20	NNE.	5	32	34	Escorted SS. <i>Daleby</i> to N. end of Mansel island returning toward Wakeham bay. Snow squalls.
24	Arrived at Wakeham bay.		NNW.	5	38	36	No ice.
29	Bound for Sugluk.		W.	2	42	38	Snow squalls. No ice.
30	Arrived at Sugluk.		NW.	5	34	34	" " "

C.G.S. *OCEAN EAGLE*, CAPTAIN W. A. POOLE, MASTER  
HUDSON BAY AND STRAIT, 1938 ICE REPORT—*Concluded*

Date	Position Noon		Wind		Temperature		State of Ice
	Lat. N.	Long. W.	Dir.	Force	Air	Sea	
1938					°F.	°F.	
Oct. 5	Departed for Montreal.		W.	4	30	35	Snow squalls. No ice.
6	61·27	68·08	WNW.	5	33	33	Bergs sighted 61·08 N. 67·08 W. 61·15 N. 66·45 W.
7	59·03	61·43	Var.	3	38	36	Bergs sighted Lat. 55·53 N. Long. 61·46 W. Lat. 58·21 N. Long. 61·10 W.
8	55·35	57·40	SW.	4	42	38	Bergs sighted Lat. 56·06 N. Long. 58·39 W. Lat. 53·07 N. Long. 57·12 W. Lat. 54·00 N. Long. 55·06 W.
9	52·05	55·36	SW.	2	46	42	No ice.

R.M.S. NASCOPIE, CAPTAIN T. F. SMELLIE, MASTER  
HUDSON BAY AND STRAIT, 1938

## EXTRACTS FROM LOG

Date	Wind		Noon Position		Course	Distance Run	Remarks
	Dir.	Force	Lat. N.	Long. W.			
1938						Nautical miles	
July 17	SE.	3	60° 52'	65° 00'	Various	227	Smooth sea, occasional fog banks, heavy field ice. 6.29 p.m. arrived at Port Burwell 7.00 p.m. commenced landing cargo.
" 18	.....	.....	Port Burwell		.....	.....	2.30 p.m. finished all cargo work, hands securing ship for sea. 3.30 p.m. sailed from Port Burwell.
" 19	E.	3	61° 28'	67° 22'	"	97	Steaming through heavy field ice.
" 20	Calm	0	Lake Harbour		"	119	5.57 a.m. arrived at Lake harbour. 6.10 a.m. commenced landing cargo. Midnight all work finished, ship ready for sea.
" 21	WNW.	3	62° 03'	72° 21'	"	72	4.02 a.m. sailed from Lake harbour, smooth sea, fine and clear.
" 22	W.	2	Wakeham bay		.....	24	4.08 p.m. arrived at Wakeham bay.
" 22	W.	2	62° 01'	72° 06'	"	27	5.30 a.m. finished landing cargo. 9.02 a.m. sailed from Wakeham bay, smooth sea, fine and clear.
" 23	SW.	4	Sugluk		.....	112	11.20 p.m. arrived at Sugluk.
" 24	N. by W.	3	Cape Dorset		.....	150	2.00 a.m. commenced landing cargo. 7.00 a.m. finished all cargo work. 8.29 p.m. sailed from Sugluk.
" 25	N. by W.	3	" "		.....	.....	10.00 a.m. arrived at Cape Dorset. 11.15 a.m. commenced landing cargo. 11.00 p.m. ceased all for this day.
" 26	Wly.	4	62° 52'	76° 49'	Various	95	4.00 a.m. resumed landin , cargo. 8.45 p.m. finished all cargo work.
" 27	Calm	0	Wolstenholme		.....	25	3.07 a.m. sailed from Dorset, fine and clear.
" 28	NW.	3	63° 30'	83° 12'	"	186	4.35 p.m. arrived at Wolstenholme, 4.40 p.m. commenced cargo work.
" 29	.....	.....	" "		.....	40	6.30 p.m. ceased work on account of bad weather.
" 30	WSW.	3	63° 18'	82° 40'	"	60	1.04 p.m. sailed from Wolstenholme.
" 30	SSE.	3	Cape Smith		"	215	3.54 p.m. arrived at Southampton. 9.00 p.m. commenced landing cargo.
" 31	SSW.	5	" "		.....	.....	2.15 a.m. finished all cargo work. 5.51 a.m. sailed from Southampton.
" 31	NW.	7	Off Cape Smith		.....	.....	Cloudy and clear.
" 31	NW.	7	Cape Smith		.....	.....	11.08 a.m. arrived at Cape Smith. 12.30 p.m. commenced cargo work.
" 31	NW.	7	" "		.....	.....	9.00 p.m. ceased work on account of bad weather.
" 31	NW.	7	Off Cape Smith		.....	.....	1.58 a.m. left Cape Smith and hove to at sea.
" 31	NW.	7	Cape Smith		.....	.....	4.12 p.m. arrived at Cape Smith. 4.30 p.m. commenced cargo work. 9.20 p.m. finished all cargo work. 11.15 p.m. sailed from Cape Smith.



R.M.S. NASCOPIE  
EXTRACTS FROM LOG—*Concluded*

Date	Wind		Noon Position		Course	Distance Run	Remarks
	Dir.	Force	Lat. N.	Long. W.			
1938						Nautical miles	
Aug. 1	SW.	4	59° 12'	80° 51'	"	123	Fine and clear.
" 2	SW.	3	Port Harrison		"	132	5.08 a.m. arrived at Port Harrison. 8.00 a.m. commenced cargo work. 7.00 p.m. ceased for day.
" 3			"				7.00 a.m. resumed cargo work. 9.40 p.m. ceased work, ship ready for sea.
" 4	E.	4	58° 26'	80° 43'	"	78	4.22 a.m. sailed from Port Harrison, fine, cloudy and clear, moderate sea.
" 5	NE.	3	59° 13'	88° 38'	"	250	Moderate sea, cloudy and clear.
" 6			Port Churchill		"	189	7.18 a.m. arrived at Churchill. 9.00 a.m. commenced cargo work. 11.00 p.m. ceased work for this day.
" 7			"				8.00 resumed bunkering. 7.15 p.m. finished bunkers and commenced loading cord wood.
" 8			"				2.00 a.m. finished all cargo. 1.12 p.m. sailed from Churchill.
" 9	NW.	4	62° 02'	90° 30'	Various	224	Fine and clear.
" 10	N.	4	Chesterfield		"	98	4.48 a.m. arrived at Chesterfield. 6.00 a.m. commenced cargo work.
" 11	N.	4	"				6.20 a.m. ceased cargo work on account of low water. 9.00 a.m. resumed cargo work. 6.30 p.m. ceased cargo work on account of low water.
" 12	WNW.	3	62° 56'	88° 47'		62	Resumed cargo work. 5.20 a.m. all cargo work finished. 6.08 a.m. sailed from Chesterfield.
" 13	E.	2	62° 22'	80° 52'	"	240	Fine and clear.
			Wolstenholme		"	98	9.40 p.m. arrived at Wolstenholme. 10.00 p.m. commenced cargo work.
" 14	Calm	0	"				1.00 p.m. finished all cargo work. 2.54 p.m. sailed from Wolstenholme.
" 15	NW.	5	62° 50'	73° 22'	"	110	Rough sea, overcast and hazy.
" 16	W.	7	62° 17'	70° 10'	"	98	Cloudy and clear.
			Lake Harbour			32	7.35 p.m. arrived at Lake Harbour. 8.00 p.m. commenced cargo work.
" 17	N.	3	"				3.00 a.m. finished work on account of low water. 7.30 a.m. resumed discharge of cargo. 2.00 p.m. finished all cargo work. 4.25 p.m. sailed from Lake Harbour.
" 18	SE.	2	60° 42'	65° 28'	"	211	Fine and clear.
			Port Burwell				3.10 p.m. arrived at Port Burwell. 4.00 p.m. commenced cargo work.
" 19			"				3.30 a.m. finished all cargo work.

MOTOR VESSEL *M. F. THERESE*, CAPTAIN M. M. COX, MASTER  
HUDSON BAY AND STRAIT, 1938

EXTRACTS FROM MASTER'S REPORT

GENERAL

The *M. F. Therese* left Montreal on Saturday July 9 at 9.50 a.m. E.D.S.T. After an uneventful run Belle Isle was passed at 9.00 a.m. July 13. All bergs in the vicinity were plotted and course set to pass five miles from Round Hill island, thence to twenty miles off Bulldog rock. From there a course was set to Cape Chidley. Numerous bergs and growlers were passed and counted, most of the bergs being passed on the port side and close inshore.

On July 15 at 4.00 p.m. field ice was sighted on the starboard side in Lat. 58.28 N. Long. 61.25 W. This ice was seen to trend towards Cape Chidley and reached as far as could be seen. Course was altered to pass around the westward end and from there the edge of the ice was followed until a point 36 miles south of the Button islands was reached, where bergs and loose isolated pans only were met.

At 1.20 a.m. July 16 dense fog set in which made navigation difficult and the only way ice could be avoided was by keeping the ship moving. On July 17 an effort to take mail from Resolution island was made, which had to be abandoned owing to fog and ice, ship continuing to Wakeham bay through fog and loose ice, arriving there July 19.

During the crossing of Hudson strait from Resolution island to a point fifteen miles off Cape Hopes Advance, thence to Wakeham bay, much ice was met, but owing to foggy weather no accurate information could be obtained. By following lanes of water the passage was made without difficulty or damage of any kind and I believe the passage could have been made by any type of ship without any trouble.

Ship left Wakeham bay for Wolstenholm after discharging supplies, arriving July 21. Ivugivuk was visited July 21 for the purpose of establishing a new mission, and Nottingham was visited July 22, from whence ship sailed for Coral harbour, Southampton island, arriving there July 24.

The *M. F. Therese* left Southampton July 24 for Chesterfield inlet, arriving there July 25. After visiting Baker lake, ship left Chesterfield inlet August 2 for Eskimo point, arriving August 3. Churchill was reached August 5, where we remained until August 12.

During the voyage to Churchill, the magnetic compass behaved very badly and was sometimes absolutely useless, compass errors being found to be as much as 49 degrees.

ICE CONDITIONS

During the return trip from Repulse bay to Ivugivuk, September 8 to 11, via Rose Welcome, the *Therese* steamed through forty miles of ice, which extended from Leyson point toward Nottingham island and reaching southward as far as could be seen with good visibility. This ice was coming from Foxe basin and was drifting southward with the wind and current.

On the whole the season was exceptionally good, no storms or very bad weather being encountered, and the ice conditions in Hudson Bay and strait were the best in years.

# HUDSON BAY ROUTE—MERCANTILE MARINE VESSELS SAILING TO AND FROM PORT CHURCHILL, 1938

## MOVEMENTS OF SHIPS

Name of Ship	Entered Hudson Strait	Port Churchill		Cleared Hudson Strait
		Arrival	Departure	
<i>Daleby</i> .....	Sept. 21 12.30 a.m.	Sept. 25 8.55 a.m.	Sept. 28 10.45 a.m.	Oct. 2 9.00 a.m.
<i>Rudby</i> .....	Sept. 24 11.30 p.m.	Sept. 29 4.25 p.m.	Oct. 2 12.54 p.m.	Oct. 7 12.20 a.m.
<i>Gullpool</i> .....	Sept. 27 7.00 p.m.	Oct. 4 11.15 a.m.	Oct. 7 5.30 p.m.	Oct. 13 01.25 a.m.

All times are based on 60° Long., Atlantic Standard Time.

## PORT CHURCHILL, 1938

Exports..... 916,913 bushels wheat

## TRAFFIC AT PORT CHURCHILL

Shipping	1938	1937
Arrivals:—		
Number of Vessels.....	25	14
Net Registered Tonnage.....	13,480	9,903
Departures:—		
Number of Vessels.....	26	14
Net Registered Tonnage.....	14,194	9,903
Total Arrivals and Departures:—		
Number of Vessels.....	51	28
Net Registered Tonnage.....	27,674	19,806
Water Borne Cargo Tonnage (Tons—2,000 lbs. weight or measure)		
Inward.....	52	2,004
Outward.....	28,780	19,050*
Total.....	28,832	21,054*

\* Revised Figures.

## HYDROGRAPHIC INFORMATION PERTAINING TO HUDSON BAY AND STRAIT

The Hydrographic and Map Service, Department of Mines and Resources, publish a series of navigation charts and also a volume of Sailing Directions covering the Hudson Bay Route from the Atlantic entrance of Hudson strait to Churchill. These are kept up to date and added to from time to time as new information becomes available.

The "Tide Tables for the Atlantic Coast of Canada", published by the Tidal and Current Survey Division of the same Service, contain predictions for the port of Churchill and for Moosonee in James bay. Tables in leaflet form





S.S. FIREY OUTWARD BOUND, PORT CHURCHILL



are available for port Nelson. Tidal differences for twelve localities in Hudson strait and for six localities in James bay afford the times of high and low waters in these areas. The time of the turn of the tidal streams in the southern offing of Resolution and Nottingham islands is also given. The automatic tide gauge is kept in operation each season at Churchill for the extension of the tidal records by which the predictions are improved.

## HYDROGRAPHIC PUBLICATIONS—HUDSON BAY AND STRAIT

### *Charts—*

- 401 Churchill harbour.
- 402 Nelson roads.
- 403 Approaches to Nelson river.
- 404 Anchorages in Hudson strait.  
Sugluk inlet.  
Port Burwell.  
Button islands.
- 405 Hudson bay and strait.
- 406 Cape Tatnam to Port Nelson.
- 407 Anchorages in Hudson strait.  
Charles inlet.  
Savage harbour.  
Acadia cove.
- 408 Cape Churchill to Churchill harbour.
- 500 Cape Churchill to Egg river.
- 501 Wakeham and Fisher bays and approaches.  
Wakeham bay.  
Fisher bay.
- 502 C. Prince of Wales to C. Weggs.  
Douglas harbour.
- P1409 Churchill harbour to Hubbart point.
- P1502 James bay.
- P1503 Pritzler harbour to cape Weymouth.  
Balcom and Barrier inlets.  
Shaftesbury inlet.
- P1504 Mouth of Moose river.
- P1505 Rupert bay.
- P1506 Mouth of Rupert river.
- P1507 Lower Savage islands to Pritzler harbour.  
Pritzler harbour.
- P1508 Erik cove to Nuvuk harbour including Digges islands.  
Erik cove.  
Port de Laperriere.  
Nuvuk harbour.  
Digges harbour.

### *Sailing Directions—*

Sailing Directions for the Hudson Bay Route.

### *Tide Tables—*

Tide Tables for the Atlantic Coast of Canada.

NOTE.—The above may be obtained from the Canadian High Commissioner's Office, London, England; The Engineer in charge, Department of Transport, Churchill, Manitoba; or from the Hydrographic and Map Service, Department of Mines and Resources, Ottawa. Charts and Sailing Directions are issued at 50 cents per copy, all orders to be accompanied with remittance to the full amount, by postal or express money order payable to the Receiver General for Canada. Tide Tables are issued at 25 cents per copy.



# C.G.S. N. B. McLEAN METEOROLOGICAL REPORT 1938

18

Date	Noon Position	Barometer			Temperature		Wind						Fog Hours	Remarks	
							Wind								
		Air		Sea	8 a.m.		4 p.m.		12 p.m.						
		Max.	Min.	Temp.	Dir.	F.	Dir.	F.	Dir.	F.					
1938		°F.	°F.	°F.									A.M.	P.M.	
Sept. 23	Acadia Cove.....	29-26	29-26	29-26	43	33	35			NE.	1	Calm	0		Light wet snow.
" 24	" .....	29-40	29-48	29-34	42	31	33	Calm	0	N.	1	W.	4		Fine and hazy.
" 25	61-48 N.   68-53 W.	29-61	29-47	29-20	43	31	32	W.	4	S.	4	S.	5		Overcast with light rain.
" 26	Diana bay.....	28-88	28-73	29-86	47	31	33	S.	3	SW.	5	WNW.	9		Moderate gale and occasional showers
" 27	61-58 N.   71-35 W.	29-34	29-58	29-68	31	28	33	WNW	5	NW.	4	WNW.	4		Overcast and cloudy moderate sea.
" 28	62-26 N.   79-31 W.	29-73	29-69	29-64	43	28	38	SW.	4	SW.	5	SW.	2		Overcast, light rain.
" 29	62-50 N.   79-35 W.	29-68	29-79	29-87	38	29	34	W.	3	N.	3	NE.	2		Overcast and fog clear.
" 30	62-42 N.   77-58 W.	29-98	29-98	30-02	43	28	32	NW.	1	NNW	1	N.	2		Cloudy with snow flurries.
Oct. 1	62-26 N.   74-52 W.	30-03	30-01	29-82	31	27	34	NW.	3	W.	2	SSW.	6		Overcast and snow flurries.
" 2	Sugluk.....	29-54	29-26	29-48	39	32	37	SSW.	6	W.	6	WNW.	6		Overcast and snow flurries.
" 3	" .....	29-70	29-65	29-71	37	30	34	W.	6	WNW.	5	WNW.	2		Clear and cloudy.
" 4	" .....	29-70	29-81	30-02	31	29	33	WNW.	1	NNW.	2	NNE.	5		Overcast and snow squalls.

"	5	62-18N.   75-25W.	30-18	30-04	29-88	33	24	35	N.	1	W.	4	W.	4	0	Clear and cloudy.	Overcast, occasional snow.
"	6	61-55N.   71-05W.	29-86	29-83	29-82	40	32	34	W.	5	W.	1	W.	2	0	Snow squalls.	Clear and cloudy.
"	7	Wakeham Bay...	29-73	29-70	29-66	46	34	37	WSW.	1	WSW.	1	WN.	2	0	Overcast, occasional rain.	Clear sky and overhanging fog.
"	8	"	29-76	29-84	29-82	44	28	32	N.	4	NW.	2	Calm	0	0	Overcast and clear.	Fine and clear.
"	9	"	29-62	29-39	29-44	45	29	32	SE.	3	WNW.	5	WNW	2	0	Overcast and occasional snow.	Clear and cloudy.
"	10	"	29-58	29-75	29-61	42	29	35	NW.	3	WNW.	2	SW.	3	0	Clear and overcast.	"
"	11	62-07N.   71-59W.	29-46	29-66	29-72	43	28	34	W.	3	NNW.	4	NNW	3	0	Clear and cloudy.	"
"	12	Diana bay.....	29-76	29-73	29-74	32	28	30	NW.	2	ENE.	2	ENE.	3	0	Clear and fine.	"
"	13	Acadia cove	29-82	29-84	29-71	32	28	32	ENE.	4	E.	3	E.	5	0	Clear and fine....	Overcast and clear.
"	14	"	29-64	29-63		34	32	34	SE.	6	SE.	5	.....	0	0	Raining, overcast.	

## RESOLUTION ISLAND METEOROLOGICAL REPORT, 1938

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog.	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938 July										
1.....	29.94	48	26	W.	10	W.	Lt.			
2.....	30.06	42	31	W.	Lt.	W.	16			
3.....	30.10	47	31	W.	Lt.	Calm				
4.....	29.82	48	36	SE.	6	Calm				
5.....	29.72	47	34	W.	8	N.	Lt.	8		
6.....	29.62	44	34	NW.	Lt.	W.	12	4		
7.....	29.57	38	30	W.	12	W.	10	4	Trace	.04
8.....	29.68	40	32	W.	6	E.	Lt.		.02	
9.....	29.67	36	32	E.	12	E.	10			
10.....	29.80	37	31	N.	Lt.	W.	10	8		
11.....	29.79	40	29	W.	8	W.	Lt.	12		
12.....	29.68	44	34	E.	Lt.					
13.....	29.36	38	34	E.	28	N.	8	10	.28	.06
14.....	29.44	43	32	NW.	Lt.	Calm				
15.....	29.61	46	34	Calm		E.	12			
16.....	29.70	40	32	E.	12	E.	16			
17.....	29.74	34	30	E.	16	E.	20	24		
18.....	29.71	35	30	E.	20	E.	14	24		
19.....	29.70	36	32	E.	6	W.	6	22	Trace	.02
20.....	29.41	42	30	E.	8	E.	26	12		.01
21.....	29.42	40	34	W.	Lt.	W.	6	24	.12	.26
22.....	29.53	39	30	W.	18	W.	8	10		
23.....	29.61	42	32	W.	10	SW.	Lt.			
24.....	29.49	46	34	W.	Lt.	E.	6	20	.08	.02
25.....	29.31	44	38	NE.	24	N.	8		.24	
26.....	29.50	40	33	S.	Lt.	W.	8	3		
27.....	29.59	38	33	SW.	6	W.	8	6	.02	.06
28.....	29.61	42	32	S.	8	W.	Lt.		.08	.08
29.....	29.52	40	31	W.	6	S.	Lt.	24		
30.....	29.56	39	31	W.	8	W.	Lt.	12		
31.....	29.34	42	34	E.	16	E.	14			.24
August										
1.....	29.49	44	34	W.	14	W.	10		1.34	
2.....	29.65	42	34	E.	6	E.	24			
3.....	29.51	38	34	E.	10	N.	10	3		
4.....	29.55	38	32	W.	16	W.	14	8		
5.....	29.56	48	28	E.	8	E.	12			Trace
6.....	29.64	44	36	E.	6	S.	Lt.			
7.....	29.62	41	35	E.	Lt.	W.	6			
8.....	29.65	40	32	W.	10	W.	2			
9.....	29.56	40	34	W.	Lt.	W.	10			
10.....	29.48	37	36	S.	14	W.	6	4		.10
11.....	29.58	40	33	SW.	12	W.	8		.14	
12.....	29.50	42	34	SW.	8	E.	10			
13.....	29.40	43	34			W.	Lt.	24		
14.....	29.37	38	31	W.	8	E.	36	12		.02
15.....	29.01	37	33	W.	20	W.	32	4	.12	
16.....	29.37	39	36	W.	36	W.	38		Trace	
17.....	29.82	37	33	W.	28	W.	16			
18.....	30.03	47	36	W.	Lt.	E.	8			
19.....	29.97	47	36	E.	6	N.	8			
20.....	29.89	48	34	E.	8	E.	6			
21.....	29.70	42	34	E.	Lt.	E.	22			
22.....	29.57	38	33	NE.	30	E.	18	8		
23.....	29.58	38	30	NE.	Lt.	W.	12	12		
24.....	29.34	35	31	S.	6	SE.	10	8		.02



## RESOLUTION ISLAND METEOROLOGICAL REPORT, 1938

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
July			
1	Partly cloudy all day.....	35	Open water all directions, little scattered ice, numerous bergs and growlers.
2	Cloudy all day.....	35	Open water all directions with some scattered ice, numerous bergs and growlers.
3	Clear all day.....	40	Open water, some scattered ice numerous bergs and growlers.
4	Clear to cloudy.....	30	Open water, some loose scattered ice and numerous bergs.
5	Overcast to clear.....	$\frac{1}{2}$ - 20	Open water with few scattered pieces ice.
6	Overcast to partly cloudy.....	1 - 20	" and loose scattered ice all directions.
7	Overcast with showers.....	0 - 30	Open water and loose scattered ice all directions.
8	Cloudy to clear.....	35	Open water and scattered ice all directions.
9	Overcast.....	5-15	Loose scattered ice all directions.
10	".....	500 yds.-25 miles	Scattered ice all directions.
11	Overcast with fog to clear.....	0-35	Close packed ice all directions, numerous bergs and growlers.
12	Partly cloudy to clear.....	35	Scattered ice all directions, several bergs and growlers.
13	Overcast all day.....	$\frac{1}{2}$ -10	Scattered ice all directions.
14	Overcast to partly cloudy.....	25	Scattered ice all directions, many bergs and growlers.
15	Clear all day.....	35	Scattered ice all directions.
16	".....	$\frac{1}{2}$ -35	" " one large berg close in shore.
17	Overcast all day.....	200 yds.-5 miles	Ice conditions changing with tides, open water and scattered ice to close packed along shore.
18	Fog all day.....	0	Ice unobserved.
19	Overcast with fog all day, showers in afternoon.	0	"
20	Overcast all day.....	0 - 20	Few pieces scattered ice and several bergs.
21	Dense fog all day.....	0	Ice unobserved.
22	Clear all day.....	35	Open water all directions except for strings off shore.
23	Clear to overcast.....	35	Some scattered ice several bergs and growlers.
24	Overcast with light showers and fog.	0 - 35	Scattered ice along shore, clear water elsewhere, few growlers.
25	Overcast with rain to clear.....	35	Scattered ice all directions, few bergs and growlers.
26	Overcast to partly cloudy.....	$\frac{1}{2}$ -30	Scattered ice all directions.
27	Cloudy all day.....	0 - 20	" " " "
28	Partly cloudy to overcast with showers.	25	" along shore, open water elsewhere.
29	Overcast, dense fog.....	0	Ice unobserved.
30	Overcast to partly cloudy.....	0 - 35	Open water all directions, few bergs.
31	Overcast, heavy rain.....	2 - 20	Small amount loose ice along shore.
Aug.			
1	Overcast to clear.....	30	Open water all directions, several bergs.
2	Partly cloudy to overcast.....	25	Open water all directions, several bergs.
3	Cloudy to overcast.....	$\frac{1}{2}$ -25	Open water all directions, few bergs.
4	Clear to overcast.....	0-25	Open water to horizon.
5	Clear to partly cloudy.....	25	Open water to horizon with few pieces of scattered ice along shore.
6	Clear to cloudy.....	25	Open water all directions.
7	Partly cloudy to clear.....	25	Few scattered pieces ice.
8	Clear to partly cloudy.....	200 yds. 30 miles	Few pieces ice along shore
9	Partly cloudy to overcast.....	20	" " " "
10	Cloudy to overcast, rain and fog, during afternoon.	0 - 20	Open water all directions.
11	Clear.....	30	Few pieces ice, several bergs and growlers.
12	Overcast.....	35	Few bergs.
13	Dense fog.....	0	Ice unobserved.
14	Overcast.....	0 - 6	Few scattered pieces ice.
15	".....	5	Few bergs.
16	".....	6	Few bergs and scattered ice in sight.
17	Clear.....	30	Few bergs.
18	".....	30	Few bergs in sight.
19	".....	35	" " " "
20	Fine and clear.....	35	Few bergs and growlers in sight.
21	Clear to overcast.....	30 - 6	Few bergs in sight.
22	Moderate fog.....	3	No ice in sight.
23	Intermittent fog all day.....	0 - 10	" " " "
24	Cloudy during a.m. then dense.....	0 - 10	" " " "

## RESOLUTION ISLAND METEOROLOGICAL REPORT, 1938—Cont.

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938 August										
25.....	29.46	37	31	W.	24	S.	18	.....	.06	.....
26.....	29.46	43	34	S.	16	S.	14	.....	.04	.....
27.....	29.51	45	34	SW.	Lt.	W.	6	24	.....	.....
28.....	29.71	42	33	W.	8	E.	8	.....	Trace	.....
29.....	29.50	40	34	E.	20	E.	12	6	.....	.04
30.....	29.52	36	34	S.	14	S.	18	2.0	.02	.....
31.....	29.68	36	33	S.	18	E.	12	6	.....	.04
September										
1.....	29.34	39	32	E.	Lt.	W.	12	6	.16	.....
2.....	29.37	35	33	E.	32	S.	12	.....	.01	.....
3.....	29.14	38	35	S.	28	W.	20	.....	.18	.02
4.....	29.45	43	32	S.	8	E.	10	.....	.....	.....
5.....	29.26	44	34	E.	22	NE.	20	6	.18	.10
6.....	29.06	40	36	E.	20	NE.	14	.....	.04	.20
7.....	29.21	40	36	N.	18	.....	.....	4	.24	.....
8.....	29.66	38	31	N.	14	W.	22	.....	.02	.....
9.....	29.49	35	32	W.	20	NW.	24	24	.20	.34
10.....	29.77	40	31	NW.	Lt.	N.	10	.....	.02	.....
11.....	30.01	34	29	SW.	14	Calm	.....	24	.....	.....
12.....	29.82	37	29	NE.	18	NE.	34	.....	.....	.....
13.....	29.37	39	36	NE.	28	NE.	20	24	.01	.02
14.....	29.42	38	36	NE.	16	NE.	10	24	.02	.26
15.....	29.35	41	34	NE.	10	NE.	12	24	.....	Trace
16.....	29.38	40	34	NE.	12	Calm	.....	24	.10	.08
17.....	29.54	37	32	N.	6	W.	18	.....	.02	Trace
18.....	29.77	35	30	W.	26	W.	22	.....	.....	.....
19.....	29.72	36	31	SW.	20	S.	16	6	.....	.....
20.....	29.56	36	30	W.	28	W.	16	12	.14	.....
21.....	29.65	36	30	SW.10	10	SW.	18	.....	.....	.....
22.....	29.92	36	33	S.	12	W.	Lt.	18	.10	.12
23.....	29.12	36	32	NE.	20	NE.	6	.....	.....	.....
24.....	29.35	36	32	Calm	.....	W.	10	.....	.02	Trace
25.....	29.47	34	30	W.	Lt.	S.	14	.....	.....	.....
26.....	28.84	40	30	S.	28	.....	.....	.....	.06	.....
27.....	29.20	36	29	W.	8	N.	10	.....	.20	.....
28.....	29.62	33	28	W.	8	W.	12	.....	.....	.....
29.....	29.68	33	28	SW.	6	SW.	18	4	.....	.....
30.....	29.77	32	28	W.	16	W.	12	20	.....	.....
October										
1.....	29.88	32	28	Calm	.....	SE.	Lt.	8	.....	.....
2.....	29.61	30	27	SW.	16	S.	30	8	.....	.02
3.....	29.43	34	28	W.	40	W.	48	.....	.08	.....
4.....	29.64	32	28	SW.	6	W.	6	.....	.....	.....
5.....	29.82	31	26	NW.	8	W.	36	.....	.....	.....
6.....	29.58	32	29	W.	34	NW.	Lt.	.....	.....	.04
7.....	29.60	33	29	W.	18	W.	12	.....	.....	.02
8.....	29.65	33	29	W.	14	NE.	16	12	.04	.....
9.....	29.59	32	28	NE.	16	S.	8	2	.....	.01
10.....	29.47	32	28	E.	14	W.	8	10	.09	.....
11.....	29.46	32	27	SE.	20	W.	20	6	.....	.10
12.....	29.69	29	21	NW.	Lt.	N.	Lt.	.....	.....	.....
13.....	29.72	32	22	SW.	14	NE.	28	.....	.....	.....
14.....	29.53	33	31	E.	40	E.	24	12	.02	.12
15.....	29.47	33	32	SE.	10	W.	12	8	.22	.08
16.....	29.31	33	31	NW.	20	SW.	14	.....	.....	.01
17.....	29.39	33	31	S.	10	W.	14	.....	.01	.....
18.....	29.49	31	28	SW.	10	W.	14	.....	.....	.01
19.....	29.38	31	28	Calm	.....	E.	6	.....	.01	.10
20.....	29.24	32	27	S.	Lt.	NE.	Lt.	.....	.10	.02
21.....	29.24	32	27	E.	20	E.	14	.....	.02	.....
22.....	29.32	32	26	N.	6	W.	16	.....	.....	.02
23.....	28.88	32	25	S.	30	W.	40	.....	.18	.22
24.....	29.06	28	24	W.	40	W.	22	.....	.04	.....

RESOLUTION ISLAND METEOROLOGICAL REPORT, 1938—*Cont.*

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
Aug.			
25	Clear to partly cloudy.....	2	Few bergs in vicinity.
26	Partly cloudy.....	15	No ice in sight.
27	Dense fog all day.....	2	"
28	Fine.....	31	"
29	Overcast some fog.....	0- $\frac{1}{2}$	"
30	Dense fog.....	10	Small bergs in vicinity.
31	Intermittent showers and overcast	20	Few bergs in sight.
Sept.			
1	Partly overcast in a.m., fog in p.m.	3 - 6	Few bergs in sight.
2	Overcast.....	6 - 12	No ice in sight.
3	Overcast, with drizzle.....	20	"
4	Fine and clear.....	15 - 30	Few bergs in sight.
5	Overcast with showers.....	6 - 10	Few small bergs in sight.
6	Light rain and fog.....	5 - 12	No ice in sight.
7	Overcast.....	4 - 7	One berg in sight.
8	Overcast with light snow flurries.	8 - 10	No ice in sight.
9	Continuous fog with rain.....	$\frac{1}{2}$	"
10	Clear.....	30	Three bergs in sight.
11	Overcast, dense fog.....	500 yds.	No ice in sight.
12	Cloudy to overcast.....	10 - 15	Few small bergs in sight.
13	Overcast with fog all day.....	500 yds.	No ice in sight.
14	Foggy all day.....	$\frac{1}{2}$ -1	"
15	Dense fog all day, light showers..	500 yds.	"
16	Dense fog and rain.....	500 yds.	"
17	Overcast with scattered showers.	12	Few large bergs and growlers in sight.
18	Clear to partly cloudy.....	30	Few bergs and growlers in sight.
19	Foggy in a.m., clearing during p.m.	10 - 15	No ice in sight.
20	Overcast, intermittent fog all day	0 - 15	Few growlers in sight.
21	Overcast.....	20 - 15	One berg in sight.
22	Foggy.....	100 yds.	No ice in sight.
23	Overcast.....	6 - 15	Few bergs in sight.
24	Overcast, trace snow.....	6	Few large bergs in sight.
25	Overcast.....	15	Few bergs in sight.
26	Overcast with heavy rain.....	5	"
27	Overcast.....	6 - 15	"
28	Fine and clear.....	30	"
29	Foggy during p.m.....	10 - $\frac{1}{2}$	"
30	Dense fog.....	100 yds.	"
Oct.			
1	Fog, clearing in late afternoon....	$\frac{1}{2}$ - 15	Few bergs in sight.
2	Snow and fog, blizzard during afternoon.	50 yds.	No ice in sight.
3	Overcast to clear.....	5 - 20	Few bergs in sight.
4	Overcast to partly cloudy.....	20	No ice in sight.
5	Clear all day.....	15	Few bergs in sight.
6	Snow during P.M.....	30	One berg in sight.
7	Fog and drizzle, snow during P.M.	$\frac{1}{2}$ - 1	No ice in sight.
8	Fog during A.M., cloudy during P.M. with snow.	7	" "
9	Fog and light snow.....	$\frac{1}{2}$ - 10	Two small bergs in sight.
10	Fog and some snow.....	7	No ice in sight.
11	Snow and fog during A.M., clear in P.M.	1 - 10	" "
12	Clear.....	35	Two bergs in sight.
13	Fine and clear.....	25	Few bergs in sight.
14	Twelve hours fog.....	2 - 10	No ice in sight.
15	Rain and fog during A.M., clear in P.M.	15	Few bergs in sight.
16	Overcast, light snow and drizzle..	1 - 10	No ice in sight.
17	Overcast.....	1 - 10	Few bergs in sight.
18	Overcast, light snow during day..	1 - 10	No ice in sight.
19	" " " "	1	" "
20	Intermittent snow.....	1 - 10	" "
21	Partly cloudy.....	15	" "
22	Overcast with snow.....	10 - 1	" "
23	" " " "	5 - 0	" "
24	Snow flurries.....	12	" "



RESOLUTION ISLAND METEOROLOGICAL REPORT, 1938—*Conc.*

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog.	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938										
October										
25.....	28.46	30	22	NE.	30	N.	50	.....	.10	.40
26.....	28.53	31	26	W.	40	SW.	36	.....	.04	.....
27.....	29.30	29	26	W.	28	SW.	16	.....	.....	.....
28.....	29.43	28	24	SW.	16	SE.	24	.....	.....	.01
29.....	29.51	25	20	NW.	18	W.	20	.....	.....	.....
30.....	29.61	29	16	W.	28	SE.	38	.....	.....	.02
31.....	29.19	30	18	SW.	18	W.	68	.....	.....	.....
November										
1.....	29.77	26	15	NW.	26	NW.	12	.....	.....	Trace
2.....	29.05	20	16	NW.	24	NW.	24	.....	.....	.02
3.....	29.91	22	15	W.	8	E.	14	.....	.....	.....
4.....	29.36	30	22	E.	38	SW.	20	.....	.01	.02
5.....	29.73	28	24	W.	24	S.	6	.....	.....	.....
6.....	29.30	34	26	NE.	36	S.	22	.....	.01	.01
7.....	29.12	30	28	SW.	26	SW.	24	.....	.09	.12
8.....	29.61	29	26	W.	10	W.	10	.....	.....	.....
9.....	29.54	29	22	NE.	10	NE.	26	.....	.....	.....
10.....	29.68	28	22	N.	16	NW.	8	.....	.....	.....
11.....	29.78	27	21	NE.	8	S.	10	.....	.....	.04
12.....	29.27	28	23	SW.	20	W.	10	.....	1.00	.....
13.....	29.35	24	15	W.	20	NW.	8	.....	.....	.....
14.....	28.87	28	22	E.	24	E.	14	.....	.02	.12
15.....	28.73	30	22	N.	20	NW.	18	.....	.08	.16
16.....	29.19	18	14	NW.	24	W.	30	.....	.....	.....
17.....	29.59	17	15	SW.	18	SW.	16	.....	.....	.02
18.....	29.45	26	22	E.	22	SE.	18	.....	.....	.02
19.....	29.23	28	20	E.	10	SW.	30	.....	.....	.04
20.....	29.22	24	20	S.	22	SE.	28	.....	.....	.....
21.....	29.46	21	18	NW.	8	NW.	Lt.	.....	.....	.....
22.....	29.67	21	11	W.	26	NW.	8	.....	.....	.....
23.....	29.64	13	11	NW.	8	NW.	8	.....	.....	.....
24.....	29.63	15	8	NW.	10	N.	Lt.	.....	.....	.01
25.....	29.73	16	7	NE.	Lt.	N.	Lt.	.....	.03	.04
26.....	29.49	15	10	SW.	20	W.	30	.....	.02	.04
27.....	29.49	20	10	SW.	16	E.	30	.....	.02	.06
28.....	29.20	20	20	S.	20	S.	20	.....	.02	.....
29.....	29.24	21	16	W.	18	NE.	26	.....	.04	.16
30.....	29.51	18	14	NW.	22	N.	8	.....	.02	.....

## CAPE HOPES ADVANCE METEOROLOGICAL REPORT, 1938

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938										
September										
27.....	29.56	32	29	N.	46	N.	8	.....	.02	.....
28.....	29.83	34	30	NW.	30	NW.	12	.....	.....	.....
29.....	29.82	38	31	SW.	20	N.	Lt.	.....	Trace	.06
30.....	29.95	32	29	NW.	32	NW.	20	.....	.01	Trace
October										
1.....	30.06	32	26	NW.	28	N.	24	.....	.....	.....
2.....	29.63	35	27	SW.	16	NW.	28	.....	.01	.30
3.....	29.62	40	32	NW.	50	W.	18	.....	.01	.....
4.....	29.79	34	28	NW.	28	NE.	Lt.	.....	.....	.....
5.....	30.01	32	28	NW.	50	NW.	36	.....	.....	.....
6.....	29.93	33	31	NW.	32	NW.	01	.....	.....	Trace
7.....	29.77	38	33	W.	18	W.	14	.....	.....	.04
8.....	29.83	35	29	NW.	28	W.	12	.....	.....	.....
9.....	29.63	33	27	S.	8	SW.	18	.....	.....	.04
10.....	29.71	33	29	NW.	50	W.	12	.....	.....	.....
11.....	29.63	35	26	S.	22	NW.	40	.....	.06	.....

RESOLUTION ISLAND METEOROLOGICAL REPORT, 1938—*Cont.*

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
Oct.			
25	Blizzard.....	0	No ice in sight.
26	Partly cloudy.....	5	" "
27	Partly cloudy.....	30	" "
28	Overcast.....	6 - 3	One growler sighted.
29	Clear.....	25	No ice in sight.
30	Squally.....	3 - 10	" "
31	Partly overcast.....	6 - 15	" "
Nov.			
1	Overcast.....	12 - 1	No ice in sight.
2	Snow flurries.....	1 - 15	" "
3	Clear.....	10 - 15	" "
4	Snow and sleet.....	$\frac{1}{2}$ - 5	" "
5	Clear, fog during late afternoon....	10 - $\frac{1}{2}$	" "
6	Overcast with snow and rain.....	6 - 1	" "
7	Light snow all day.....	$\frac{1}{2}$ - 2	" "
8	Fine.....	30	" "
9	Overcast.....	1 - 5	" "
10	Partly cloudy.....	30	One berg and some small ice.
11	Overcast, scattered snow flurries....	6 - 10	Few scattered pieces of ice.
12	Partly cloudy.....	20	No ice in sight.
13	Overcast.....	10	" "
14	Overcast with snow.....	$\frac{1}{2}$	One berg in sight.
15	Snow flurries with drift.....	$\frac{1}{2}$	No ice in sight.
16	Clear.....	30	" "
17	Overcast with snow flurries.....	1 - 10	Few bergs.
18	" " ".....	1 - 12	" "
19	Snow flurries.....	1 - 12	Few strings light slob ice.
20	Overcast.....	3 - 7	No ice in sight.
21	Fine and clear.....	10 - 15	" "
22	Partly overcast.....	15	Ice on horizon.
23	" " ".....	10	Strings light ice in all directions.
24	Overcast with snow.....	4 - 15	Loose open ice and two bergs.
25	Snow.....	$\frac{1}{2}$ - 12	Open ice all directions.
26	Overcast.....	3 - 10	Loose ice all directions, one berg.
27	Snow.....	0 - 10	Open ice all directions.
28	Overcast.....	2 - 8	Loose ice all directions.
29	Drifting snow all day.....	0 - $\frac{1}{2}$	" " " "
30	Overcast.....	15	" " " "

## CAPE HOPES ADVANCE METEOROLOGICAL REPORT, 1938

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
Sept.			
27	Cloudy.....	10	No ice in sight.
28	Clear.....	30	One berg in sight.
29	Cloudy, snow flurries.....	8	No ice in sight.
30	" " ".....	10	" "
Oct.			
1	Cloudy.....	20	No ice in sight.
2	Cloudy to clear.....	15	" "
3	Cloudy.....	20	" "
4	Cloudy, with occasional snow flurries.	20	" "
5	Partly cloudy to clear.....	20	" "
6	Overcast and hazy.....	10	" "
7	Overcast with light rain.....	10	" "
8	Cloudy to clear.....	20	" "
9	Snow flurries changing to light rain.	10	" "
10	Cloudy to clear.....	20	" "
11	" " ".....	20	" "

## NOTTINGHAM ISLAND METEOROLOGICAL REPORT, 1938

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938 July										
1.....	30-28	50	38	E.	6	W.	18			
2.....	30-19	54	34	S.	8	S.	18			
3.....	29-92	54	40	SE.	10	SE.	16			.06
4.....	29-87	47	32	W.	12	NW.	24	18	.10	
5.....	30-07	50	31	W.	Lt.	N.	8			
6.....	29-99	50	35	W.	Lt.	NW.	12			
7.....	29-92	57	34	NW.	14	NW.	12			
8.....	29-85	56	34	W.	Lt.	N.	20		.01	
9.....	29-94	54	38	N.	Lt.	W.	Lt.			
10.....	30-03	51	37	N.	Lt.	S.	Lt.		.01	
11.....	29-92	55	40	NE.	16	NE.	12			
12.....	29-82	55	41	NE.	18	NE.	14			
13.....	29-65	54	38	W.	Lt.	SW.	Lt.			
14.....	29-57	55	35	W.	Lt.	E.	6			
15.....	29-66	55	38	NE.	Lt.	E.	10			
16.....	29-72	50	33	NE.	18	NE.	22			
17.....	29-76	46	37	NE.	20	NE.	22		.02	
18.....	29-88	56	40	E.	18	E.	Lt.			
19.....	29-84	58	36	Calm		SW.	Lt.			
20.....	29-66	53	42	W.	Lt.	NW.	10			
21.....	29-69	58	38	N.	12	NW.	12			
22.....	29-71	54	38	SW.	12	W.	8			
23.....	29-74	52	36	SW.	Lt.	SW.	6	12		
24.....	29-64	58	34	W.	Lt.	SE.	8			
25.....	29-58	51	40	W.	Lt.	W.	10	6		
26.....	29-66	51	38	W.	6	S.	14	6		.06
27.....	29-72	45	38	E.	Lt.	E.	16		.16	
28.....	29-61	50	37	W.	12	SW.	Lt.	8	.20	
29.....	29-69	49	34	SW.	10	N.	20			Trace
30.....	29-68	46	34	NW.	Lt.	E.	12			.30
31.....	29-55	50	36	NE.	22	NW.	10		.56	
August										
1.....	29-57	46	36	SW.	18	SW.	24	4		.02
2.....	29-64	44	36	S.	10	SW.	6	18	.28	
3.....	29-82	48	32	W.	Lt.	SW.	12			Trace
4.....	29-80	51	36	SW.	6	E.	Lt.		.04	
5.....	29-80	51	34	SW.	Lt.	E.	10			
6.....	29-85	53	36	E.	Lt.	W.	6			
7.....	29-88	49	37	NW.	Lt.	SW.	8			
8.....	29-70	44	38	SW.	18	SW.	12	6	.02	.02
9.....	29-54	43	37	SW.	20	SW.	12	16	.02	.08
10.....	29-61	45	34	NW.	10	W.	12		.16	
11.....	29-66	50	37	SW.	10	W.	12	4	.04	.02
12.....	29-66	45	38	SW.	6	W.	8		.02	.02
13.....	29-75	48	33	W.	Lt.	SW.	10			Trace
14.....	29-38	45	38	SE.	10	W.	8			
15.....	29-52	40	35	NW.	30	NW.	18		.01	
16.....	29-83	44	34	W.	14	W.	10			
17.....	30-02	45	34	S.	12	SW.	12	5		
18.....	30-11	57	36	NW.	10	NE.	16			
19.....	30-16	57	39	E.	12	E.	10			
20.....	30-12	48	39	NE.	22	E.	20			
21.....	29-77	50	38	NE.	24	NE.	26			
22.....	29-87	50	38	NE.	16	W.	8			
23.....	29-70	44	35	SW.	6	SW.	12			
24.....	29-54	43	37	W.	10	W.	14		.04	
25.....	29-58	46	35	SW.	6	E.	12		.04	
26.....	29-38	43	36	E.	10	S.	16	8	.06	
27.....	29-55	42	34	SW.	Lt.	SW.	12			
28.....	29-69	43	35	S.	8	S.	16			Trace
29.....	29-41	41	36	NE.	50	NE.	28		.46	.60
30.....	29-40	41	35	N.	Lt.	N.	8		.06	.12
31.....	29-55	39	34	NW.	8	NW.	10		.10	.01
September										
1.....	29-52	43	33	NW.	8	NW.	10		Trace	
2.....	29-44	42	32	W.	6	N.	12			

## NOTTINGHAM ISLAND METEOROLOGICAL REPORT, 1938

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
July			
1	Partly cloudy.....	25	Strings loose ice all directions, mostly open water.
2	" ".....	20	Scattered ice and much open water all directions.
3	Cloudy all day.....	20	Strings loose packed ice, mostly open water.
4	Overcast to partly cloudy.....	$\frac{1}{2}$ - 10	Scattered ice all directions.
5	Cloudy all day.....	25	Few scattered pieces ice, mostly open water.
6	Overcast to partly cloudy.....	25	Widely scattered ice all directions.
7	Clear all day.....	25	Loose scattered ice, mostly open water all directions.
8	Partly cloudy all day.....	25	Mostly close packed ice all directions to horizon.
9	Partly cloudy.....	25	Close packed ice all directions.
10	Cloudy.....	20	Loose packed ice all directions, numerous patches open water.
11	Partly cloudy to clear.....	25	Loose scattered ice all directions.
12	Partly cloudy all day.....	25	" " " "
13	Mostly cloudy all day.....	25	" " " "
14	Partly cloudy all day.....	20	Widely scattered ice all directions.
15	Clear.....	20	Loose scattered ice westward, clear water southward
16	Overcast.....	25	Loose scattered ice on horizon.
17	Cloudy.....	20	Strings ice to westward.
18	Partly cloudy.....	20	Few pieces scattered ice.
19	Partly cloudy all day.....	25	" " " "
20	Clear all day.....	25	" " " "
21	Partly cloudy all day.....	25	Few small pieces ice visible.
22	Partly cloudy.....	25	No ice in sight.
23	Mostly cloudy.....	0 - 15	" "
24	Partly cloudy to clear.....	35	" "
25	Overcast all day.....	0 - 20	" "
26	Cloudy, rain during P.M.....	15	" "
27	Overcast, rain all day.....	5 - 10	" "
28	Partly cloudy.....	0 - 25	" "
29	Cloudy to partly cloudy.....	20	" "
30	Overcast, rain all day.....	10	" "
31	Cloudy to clear.....	20	" "
Aug.			
1	Overcast all day.....	0 - 10	No ice in sight.
2	Overcast, heavy fog all day.....	0 - 1	" "
3	Cloudy all day, rain during P.M.....	25	" "
4	Partly cloudy to overcast.....	25	" "
5	Overcast to clear.....	15	" "
6	Partly cloudy.....	20	" "
7	Partly cloudy to cloudy.....	25	" "
8	Overcast, light rain at intervals.....	1 - 5	" "
9	Overcast, rain at intervals.....	1	" "
10	Partly cloudy to cloudy.....	8	" "
11	Partly cloudy all day.....	20	" "
12	Light rain during A.M., clear during P.M.....	20	" "
13	Cloudy all day.....	15	" "
14	Overcast.....	15	" "
15	Cloudy.....	15	" "
16	Partly cloudy to clear.....	25	" "
17	Cloudy.....	1 - 20	" "
18	Partly cloudy.....	25	" "
19	Clear.....	20	" "
20	".....	15	" "
21	".....	20	" "
22	Clear to partly cloudy.....	15	" "
23	Partly cloudy.....	20	" "
24	Overcast.....	12	" "
25	Rain and fog.....	2 - 15	" "
26	".....	2 - 15	" "
27	Cloudy.....	15	" "
28	".....	10	" "
29	Rain during day.....	2	" "
30	Intermittent rain.....	3	" "
31	Overcast.....	7	" "
Sept.			
1	Overcast.....	7 - 4	No ice in sight.
2	Overcast to cloudy.....	5 - 10	" "



NOTTINGHAM ISLAND METEOROLOGICAL REPORT, 1938—*Cont.*

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog.	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938 September										
3.....	29.33	39	32	N.	12	NW.	12	7		
4.....	29.61	42	32	NW.	10	NW.	10	6	.02	
5.....	29.75	41	32	N.	10	W.	10	6		
6.....	29.66	44	34	Calm		N.	20			
7.....	29.90	39	32	N.	16	NW.	24			
8.....	29.87	40	31	W.	10	NW.	18			
9.....	29.73	43	33	NW.	8	NW.	10			.10
10.....	30.06	39	28	N.	8	W.	6			
11.....	29.88	41	27	NE.	8	W.	20			
12.....	29.65	42	36	NE.	20	NE.	22		Trace	
13.....	29.46	40	35	NE.	22	NE.	8		.16	
14.....	29.44	42	33	NE.	Lt.	E.	6		.20	
15.....	29.45	39	32	N.	16	N.	20			
16.....	29.50	39	32	N.	16	NW.	10			Trace
17.....	29.82	46	33	N.	10	NW.	10			
18.....	29.93	37	27	SW.	14	SW.	26	10		
19.....	29.61	37	32	SW.	20	W.	14			.02
20.....	29.87	36	30	NW.	16	S.	10		.04	
21.....	29.57	37	31	SW.	24	Calm		12	.06	
22.....	29.33	36	32	Calm		Calm		24	Trace	.02
23.....	29.35	35	30	N.	10	N.	12		.08	
24.....	29.72	32	27	NW.	12	NW.	10			
25.....	29.28	39	29	SE.	8	SW.	12	7	.02	.08
26.....	29.04	37	31	NE.	24				.36	
27.....	29.62	28	24	NW.	12	W.	Lt.			
28.....	29.69	34	25	SW.	12	SW.	20			.14
29.....	29.78	34	30	W.	6	N.	10	4	.06	
30.....	30.05	31	24	N.	6	N.	Lt.			
October										
1.....	29.90	33	22	Calm		S.	26			
2.....	29.36	36	29	S.	34	N.	18		.08	.26
3.....	29.71	33	29	W.	20	W.	10			
4.....	29.90	36	26	NW.	18	N.	20			.01
5.....	30.14	32	24	W.	12	W.	20			
6.....	29.90	34	30	S.	20	W.	10	12		.04
7.....	29.75	34	27	Calm		N.	10	4	.02	
8.....	29.87	27	21	NE.	8	SE.	12		.26	
9.....	29.39	34	25	S.	16	NW.	22	8	.06	.02
10.....	29.64	33	24	W.	Lt.	SW.	8	6		.06
11.....	29.63	32	18	N.	Lt.	Calm			.02	
12.....	29.75	28	15	E.	6	E.	16			
13.....	29.40	34	26	SE.	20	E.	20			
14.....	29.23	36	33	S.	6	E.	12	4	.14	.14
15.....	29.15	38	32	S.	30	S.	12			
16.....	29.25	34	31	SW.	6	W.	18		.06	.04
17.....	29.40	32	28	NW.	6	W.	10			
18.....	29.62	29	26	NW.	12	NW.	10		.06	
19.....	29.48	29	21	NW.	Lt.	NE.	Lt.		.06	
20.....	29.52	30	20	NE.	Lt.	N.	8		.06	.04
21.....	29.47	28	25	N.	22	N.	16			
22.....	29.42	29	24	NW.	6	W.	20			.01
23.....	29.08	26	16	N.	20	NW.	20		.19	
24.....	29.26	21	18	NW.	12	SW.	Lt.			
25.....	29.10	23	12	NW.	Lt.	N.	10			
26.....	29.06	23	15	NW.	18	NW.	16		.20	.04

NOTTINGHAM ISLAND METEOROLOGICAL REPORT, 1938—*Cont.*

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
Sept.			No ice in sight.
3	Overcast.....	5 - 3	" "
4	Partly cloudy.....	2 - 10	" "
5	Overcast.....	2 - 10	" "
6	Cloudy.....	12	" "
7	Partly cloudy to cloudy, snow flurries.	10	" "
8	Overcast, snow flurries.....	8 - 5	" "
9	Overcast with intermittent rain..	8	" "
10	Partly cloudy with fog.....	8 - 1	" "
11	Cloudy.....	10	" "
12	Overcast, light rain.....	5	" "
13	Intermittent showers and drizzle.	0 - 6	" "
14	Overcast, trace of rain.....	5	" "
15	Overcast with mist.....	6	" "
16	Overcast with rain.....	4 - 10	" "
17	Overcast to clear.....	10	" "
18	Overcast with some fog.....	10	" "
19	Intermittent drizzle and snow flurries.	500 yds - 5 miles	" "
20	Partly cloudy to cloudy.....	7	" "
21	Fog and drizzle all day.....	$\frac{1}{2}$	" "
22	Fog all day.....	500 yds. - 2 miles	" "
23	Light snow during A.M., cloudy during P.M.	15	" "
24	Overcast with snow flurries.....	10	" "
25	Overcast with rain.....	2 - 6	" "
26	Snow flurries during A.M.....	6	" "
27	Cloudy to partly cloudy.....	7	" "
28	Overcast, snow and rain.....	10 - 1	" "
29	Intermittent snow flurries.....	6	" "
30	Mostly cloudy with snow flurries	10 - 4	" "
Oct.			
1	Overcast with snow flurries and rain.	5	No ice in sight.
2	Gale during morning, snow during afternoon.	$\frac{1}{2}$	" "
3	Clear to cloudy.....	10	" "
4	Overcast with snow.....	500 yds. - 6 miles	" "
5	Partly cloudy to cloudy.....	7 - 10	" "
6	Showers, snow and fog.....	2 miles to 100 yds.	" "
7	Light snow flurries.....	1 - 7	" "
8	Overcast all day.....	10	" "
9	Overcast with fog all a.m., snow flurries during p.m.	$\frac{1}{2}$ - 7	" "
10	Fog and mist during a.m., snow during p.m.	4 miles - 100 yds.	" "
11	Partly cloudy to clear.....	7	" "
12	Cloudy to clear.....	12	" "
13	Overcast.....	10	" "
14	Fog during a.m., showers.....	2 - 8	" "
15	Overcast with snow.....	4 - 10	" "
16	Overcast with intermittent snow flurries.	7	" "
17	Overcast all day.....	5	" "
18	Cloudy.....	5	" "
19	Cloudy with snow.....	6	" "
20	Cloudy to partly cloudy.....	10 - 15	" "
21	Overcast.....	5	" "
22	Partly cloudy to overcast, snow flurries in afternoon.	2 - 7	" "
23	Mostly overcast with ground drift.	5	" "
24	Overcast.....	10	Slob ice in cove.
25	Snow.....	10 miles - 300 yds.	No ice in sight.
26	Overcast with intermittent snow flurries.	1 - 10	Slob ice in cove.

NOTTINGHAM ISLAND METEOROLOGICAL REPORT, 1938—*Conc.*

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938 October										
27.....	29.45	25	13	W.	16	W.	16			.06
28.....	29.57	18	9	W.	18	NW.	12		.02	
29.....	29.90	16	7	NW.	18	W.	16			
30.....	29.68	18	10	N.	Lt.	N.	8		.01	
31.....	29.87	14	6	NW.	20	NW.	18			
November										
1.....	30.26	16	8	NW.	8	N.	14			Trace
2.....	30.35	16	10	W.	8	SW.	12			
3.....	29.63	27	21	SE.	22	E.	30			.02
4.....	29.21	32	24	S.	26	S.	14		.08	
5.....	29.67	32	25	S.	6	SW.	Lt.		.06	
6.....	29.29	29	24	E.	24	NE.	14		.04	.04
7.....	29.47	30	23	NE.	12	NE.	22			
8.....	29.97	24	14	N.	16	N.	8			
9.....	29.80	19	14	E.	14	NE.	8			
10.....	30.00	17	9	E.	10	E.	6		.04	
11.....	29.88	20	10	E.	12	NE.	12			
12.....	29.61	19	5	N.	20	N.	16			.04
13.....	29.54	10	1	E.	Lt.	NE.	10			
14.....	29.38	11	4	N.	12	NE.	18		Trace	
15.....	29.50	9	1	N.	14	N.	12		.14	.02
16.....	29.51	25	10	W.	18	SW.	30			.02
17.....	29.37	28	17	SW.	24	S.	14			Trace
18.....	29.32	27	18			NW.	20			.06
19.....	29.23	23	13	S.	Lt.	NW.	18		.11	.18
20.....	29.48	22	9	NE.	28	N.	6			.01
21.....	29.83	10	0	N.	8	NW.	Lt.		.01	
22.....	29.82	16	— 5	E.	12	E.	10			
23.....	29.95	15	— 2	Calm		N.	12			
24.....	29.82	3	— 2	NE.	8	N.	10			
25.....	29.89	9	— 2	NW.	12	N.	12		Trace	.01
26.....	29.66	2	— 8	NE.	6	NE.	8		.01	Trace
27.....	29.12	20	3	E.	18	E.	20		.02	.10
28.....	29.14	20	10	E.	14	NE.	18		.10	
29.....	29.46	16	0	N.	12	E.	Lt.		Trace	.02
30.....	29.86	10	0	Calm		N.	6		.01	.01

## PORT CHURCHILL METEOROLOGICAL REPORT, 1938

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog.	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938 July										
1. ....	29.82	70	39	S.	12	SE.	18			
2. ....	29.68	74	58	S.	16	S.	12			.20
3. ....	30.02	68	45	NW.	18	E.	6		.42	
4. ....	30.25	53	47	W.	8	E.	12			
5. ....	30.15	74	44	S.	10	SE.	20			
6. ....	29.98	64	45	E.	12	SE.	18			
7. ....	30.05	57	41	W.	Lt.	E.	12			
8. ....	30.07	55	41	NW.	8	E.	14			
9. ....	29.96	76	61	E.	12	S.	16			
10. ....	29.85	78	53	S.	8	E.	Lt.			.03
11. ....	29.78	74	54	S.	6	N.	24	1		Trace

NOTTINGHAM ISLAND METEOROLOGICAL REPORT, 1938—*Cont.*

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
Oct.			
27	Overcast with light snow.....	10 - 1	No ice in sight.
28	Cloudy to overcast.....	30	Ground drift ice in cove.
29	Mostly cloudy.....	2 - 15	Sheet ice in cove.
30	Overcast to partly cloudy.....	5 - 20	Cove frozen over.
31	Cloudy.....	10	"
Nov.			
1	Cloudy.....	15	Cove frozen over, two strings ice to southwest.
2	Mostly overcast.....	10	Cove frozen over, two strings ice to southwest.
3	Overcast with squalls, ground drift all day.	1 - 7	Cove frozen over.
4	Mostly cloudy.....	10	"
5	Rain.....	10 - 30	"
6	Drifting snow.....	$\frac{1}{2}$ - 10	Cove half full ice.
7	Snow flurries.....	15	Cove clear of ice.
8	Overcast.....	15	No ice in sight.
9	Overcast to partly cloudy.....	15	"
10	Overcast to cloudy.....	10	Ice in cove.
11	Cloudy all day.....	15	String ice on horizon.
12	Overcast with light snow.....	1 - 10	Cove half full ice.
13	Partly cloudy to overcast.....	20	"
14	Snow flurries.....	5 - 15	Ice unchanged.
15	Overcast to partly cloudy with snow.	$\frac{1}{2}$ - 10	Cove frozen over.
16	Snow flurries.....	1 - 10	Cove frozen, string ice to southwest.
17	Overcast to cloudy, trace of snow	10 - 30	" "
18	Snow during day.....	2 - 10	" "
19	Overcast with snow.....	$\frac{1}{2}$ - 10	" "
20	Overcast with light snow to partly cloudy.	10	" "
21	Cloudy to partly cloudy.....	3 - 10	" "
22	Partly cloudy and fine.....	15	Ice unchanged.
23	Partly cloudy to overcast.....	15	"
24	Overcast.....	15	Cove frozen.
25	".....	10	String ice to southwest.
26	Partly cloudy to cloudy, snow flurries late p.m.	15	" "
27	Overcast with snow flurries and ground drift.	$\frac{1}{4}$ - $\frac{1}{2}$	" "
28	Partly cloudy with ground drift..	1 - 10	" "
29	Partly cloudy with light snow....	2 - 10	String ice to horizon.
30	Partly cloudy to clear.....	10	Ice on southwest horizon..

## PORT CHURCHILL METEOROLOGICAL REPORT, 1938

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
July			
1	Cloudy all day.....	12	No ice in sight.
2	Overcast to partly cloudy, showers.	10	"
3	Overcast to partly cloudy.....	15	"
4	Fine and clear.....	15	Ice visible on horizon to northeast.
5	Cloudy to partly cloudy.....	12	No ice in sight.
6	Partly cloudy.....	12	"
7	Partly cloudy to clear.....	15	"
8	Fine and clear.....	15	"
9	Clear.....	12	"
10	Clear to overcast with showers...	12	"
11	Overcast all day.....	0 - 12	"



PORT CHURCHILL METEOROLOGICAL REPORT, 1938—*Cont.*

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog.	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938 July										
12.....	29.90	58	39	NE.	20	E.	20		·30	
13.....	29.98	71	44	E.	8	W.	8			
14.....	29.71	72	51	W.	14	E.	12			Trace
15.....	29.62	63	52	E.	8	N.	Lt.			
16.....	29.84	63	44	N.	12	NE.	12			Trace
17.....	29.75	60	51	W.	8	W.	6			Trace
18.....	29.90	61	42	N.	24	N.	24	8	·11	Trace
19.....	30.07	70	40	N.	16	NW.	10			
20.....	29.97	72	53	NW.	12	E.	Lt.			
21.....	29.90	72	54	W.	8	N.	6			
22.....	29.84	78	54	NW.	18	W.	20			
23.....	29.76	64	52	N.	8	S.	10		·11	
24.....	29.80	60	50	NW.	10	NW.	8		Trace	·15
25.....	29.90	65	51	N.	18	NE.	Lt.			
26.....	29.88	74	54	W.	6	SW.	14			
27.....	29.67	81	56	W.	24	N.	12			
28.....	29.83	66	54	N.	12	E.	6		·01	
29.....	29.75	78	50	SW.	8	S.	12			
30.....	29.70	76	47	W.	16	N.	14		Trace	
31.....	29.80	67	43	W.	12	SW.	16			
August										
1.....	29.64	70	50	S.	12	NE.	12			·01
2.....	29.75	62	47	N.	Lt.	E.	18		·01	
3.....	29.70	67	42	S.	14	S.	16			Trace
4.....	29.54	62	49	S.	10	E.	6			·22
5.....	29.70	56	49	NE.	14	NE.	8		·36	·16
6.....	29.91	61	46	E.	Lt.	SE.	14			
7.....	30.07	60	43	SE.	Lt.	E.	10			
8.....	30.02	68	44	W.	10	NW.	12			·48
9.....	29.91	72	52	W.	16	NW.	16		·08	·01
10.....	29.87	68	50	NW.	12	SE.	12			
11.....	29.79	63	51	E.	Lt.	E.	14		·18	·05
12.....	29.79	56	47	E.	8	SE.	18		·03	
13.....	29.49	58	47	SE.	50	NE.	14	6	·21	
14.....	29.87	49	46	NE.	24	NE.	8		·01	
15.....	30.00	63	39	W.	14	SW.	10			
16.....	29.91	67	42	SW.	12	S.	14			
17.....	29.79	65	45	W.	8	E.	10			
18.....	29.84	62	42	Calm		E.	24	1		
19.....	29.65	61	47	E.	20	SE	22			
20.....	29.28	54	48	E.	6	E.	16	6	14	12
21.....	29.79	49	46	N.	18	N.	18	20	·17	·15
22.....	29.84	48	46	N.	26	N.	18	24	1·16	
23.....	30.06	62	46	W.	6	W.	14			Trace
24.....	29.94	68	51	W.	12	W.	12			
25.....	29.78	62	49	W.	12	N.	16			·02
26.....	29.83	52	45	NW.	18	N.	8			
27.....	29.77	50	40	W.	14	SE.	12		23	
28.....	29.87	48	39	N.	20	N.	10		·30	·01
29.....	30.03	55	40	NW.	14	N.	Lt.			
30.....	29.97	52	46	W.	10	N.	18		Trace	·02
31.....	30.05	53	42	NW.	11	W.	Lt.			Trace
September										
1.....	29.80	60	47	Calm		SW.	16		Trace	·07
2.....	29.72	59	44	NW.	48	W.	Lt.			·02
3.....	29.58	56	45	NW.	30	N.	32		·52	
4.....	29.99	54	41	NW.	16	S.	6			Trace
5.....	29.95	53	40	S.	6	NE.	18			
6.....	30.18	49	44	N.	16	NE.	20			
7.....	30.42	57	40	N.	10	S.	6			
8.....	30.32	60	34	S.	10	S.	12			
9.....	30.13	74	34	S.	10	S.	6			
10.....	29.83	72	44	S.	14	SE.	14			
11.....	29.62	60	48	N.	6	NW.	6			

PORT CHURCHILL METEOROLOGICAL REPORT, 1938—*Cont.*

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
July			
12	Overcast.....	1 - 10	No ice in sight.
13	Clear.....	10	"
14	Partly cloudy all day.....	15	"
15	Partly cloudy to clear.....	15	"
16	Partly cloudy to cloudy.....	12	"
17	Partly cloudy, light showers.....	12	"
18	Overcast, intermittent fog and rain.....	$\frac{1}{2}$ - 10	"
19	Fine and clear.....	15	"
20	Clear to partly cloudy.....	15	"
21	" ".....	15	"
22	Clear to overcast with thunderstorm late afternoon.....	12	"
23	Partly cloudy to clear.....	15	"
24	Overcast, intermittent rain.....	3 - 12	"
25	Clear to cloudy.....	12	"
26	Clear to partly cloudy.....	15	"
27	Partly cloudy.....	15	"
28	" ".....	15	"
29	Clear to partly cloudy.....	15	"
30	Overcast.....	6 - 12	"
31	Partly cloudy to overcast.....	15	"
Aug.			
1	Partly cloudy to overcast.....	12	No ice in sight.
2	Partly cloudy to clear.....	12	"
3	Clear to overcast.....	12	"
4	Overcast, light rain all day.....	12	"
5	Overcast with rain to partly cloudy.....	5 - 15	"
6	Overcast with showers to clear...	15	"
7	Partly cloudy to cloudy.....	12	"
8	Cloudy to clear.....	10	"
9	Partly cloudy with showers.....	15	"
10	Cloudy to overcast.....	12	"
11	Overcast with showers.....	5 - 15	"
12	Cloudy with light rain.....	6 - 12	"
13	Intermittent fog.....	$\frac{1}{2}$ - 12	"
14	Partly cloudy to clear.....	15	"
15	Clear.....	12	"
16	Fine and clear.....	15	"
17	Cloudy all day.....	12	"
18	Clear to partly cloudy.....	15	"
19	Cloudy all day.....	4 - 8	"
20	Overcast, intermittent fog.....	0 - 4	"
21	Raining all day.....	$\frac{1}{2}$	"
22	Overcast with fog.....	$\frac{1}{2}$ - 2	"
23	Partly cloudy to overcast.....	12	"
24	Clear to partly cloudy.....	12	"
25	Partly cloudy with showers during p.m.....	15	"
26	Cloudy all day.....	12	"
27	Overcast with rain during p.m....	2	"
28	Cloudy, light showers during p.m.	12	"
29	Clear to overcast.....	12	"
30	Overcast to clear.....	12	"
31	Partly cloudy.....	15	"
Sept.			
1	Clear to overcast.....	3 - 12	No ice in sight.
2	Overcast.....	3 - 12	"
3	Overcast to clear.....	2 - 10	"
4	Cloudy.....	15	"
5	Partly cloudy to overcast.....	15	"
6	Partly cloudy.....	15	"
7	Cloudy to partly cloudy.....	12	"
8	Partly cloudy.....	15	"
9	Partly cloudy.....	15	"
10	" ".....	20	"
11	Partly cloudy to cloudy.....	15	"

PORT CHURCHILL METEOROLOGICAL REPORT, 1938—*Cont.*

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938										
September										
12.	29.73	56	49	N.	12	E.	12			Trace
13.	29.72	53	46	N.	8	NE.	16	24	.34	Trace
14.	30.13	48	43	N.	22	N.	12	4	.07	Trace
15.	30.05	47	42	N.	12	NE.	10			
16.	30.07	46	42	N.	14	N.	20		.01	
17.	30.17	48	40	N.	16	S.	8		Trace	
18.	30.05	59	38	SW.	22	W.	6			
19.	30.11	59	43	W.	Lt.	E.	14			
20.	29.78	67	46	S.	14	SW.	10			
21.	29.70	68	48	NW.	10	S.	10			
22.	29.58	67	50	W.	18	NE.	12			
23.	29.86	51	42	NW.	16	SE.	Lt.			
24.	29.74	68	39	S.	14	SW.	16			
25.	29.31	62	51	S.	12	NW.	24			
26.	29.63	57	38	N.	16			3	.26	
27.	29.69	42	32	S.	18	E.	16	7	.31	.10
28.	29.91	58	35	SW.	12	SW.	14		.14	
29.	29.97	57	36	NW.	10	N.	28	3		.03
30.	30.13	47	35	S.	8	S.	24			
October										
1.	29.72	54	42	S.	20	SW.	18			
2.	30.07	53	41	NW.	26	W.	8		Trace	
3.	30.30	45	37	SW.	24	N.	6			
4.	30.60	39	30	NW.	24	NW.	12		.01	
5.	30.55	44	26	SW.	10	SW.	20			
6.	30.07	43	32	W.	14	S.	6			.10
7.	29.88	42	38	N.	22	N.	20		.37	.03
8.	29.82	52	31	S.	26	W.	18		Trace	.09
9.	29.93	48	40	N.	10	SE.	8			
10.	29.61	63	41	S.	12	S.	18			
11.	29.42	55	41	E.	20	E.	14	24		.31
12.	29.17	52	42	N.	Lt.	SW.	18	16	.09	
13.	29.18	52	40	SW.	18	SW.	10	24		
14.	29.17	48	32	W.	18	W.	24			Trace
15.	29.61	35	28	W.	32	W. 30	30		.04	
16.	29.98	33	12	NW.	26	W.	28		.01	
17.	30.12	33	24	W.	10	NW.	14			
18.	30.06	38	24	W.	10	W.	Lt.			
19.	29.82	37	30	E.	10	N.	10			
20.	29.92	35	31	NE.	10	N.	18		.02	.01
21.	30.02	33	22	NW.	16	NW.	Lt.		.01	.02
22.	29.84	43	24	W.	16	SW.	24			
23.	29.58	44	30	W.	20	N.	22			.02
24.	29.65	33	27	NW.	14	N.	18			
25.	29.95	29	24	S.	Lt.	NE.	24			.03
26.	29.70	27	11	NW.	16	NW.	22			Trace
27.	29.68	25	13	SW.	12	E.	18			.03
28.	29.98	30	10	N.	36	NW.	18		.40	
29.	30.17	30	12	SW.	20	S.	8			
30.	29.84	33	20	SE.	10	N.	34			.60
31.	30.37	22	3	NW.	24	NW.	8		.20	
November										
1.	30.37	15	- 5	W.	8	SE.	16			
2.	29.74	30	11	SE.	14	SE.	16		Trace	.60
3.	29.16	31	25	W.	12	W.	32		.20	
4.	29.52	28	14	W.	30	W.	28			
5.	29.61	17	8	W.	18	W.	18			
6.	29.79	23	11	W.	28	NW.	30			.05
7.	30.12	19	12	NW.	24	NW.	10		.02	
8.	30.01	15	3	S.	6	S.	10			
9.	29.88	17	- 4	SW.	Lt.	NW.	6	4		
10.	30.15	25	16	NW.	14	NW.	14		.10	

PORT CHURCHILL METEOROLOGICAL REPORT, 1938—*Cont.*

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
Sept.			
12	Partly cloudy to overcast.....	15	No ice in sight.
13	Fog all day.....	100 yds.- 6 miles.	"
14	Drizzle with four hours fog.....	0 - 15	"
15	Overcast to clear.....	15	"
16	Cloudy all day.....	12	"
17	Partly cloudy to clear.....	20	"
18	Partly cloudy.....	15	"
19	Partly cloudy to clear.....	20	"
20	Partly cloudy to cloudy.....	12	"
21	Partly cloudy and hazy.....	12	"
22	Partly cloudy.....	20	"
23	".....	20	"
24	".....	9	"
25	Partly cloudy to cloudy.....	5 - 15	"
26	Overcast with rain, snow squalls in afternoon.	2 - 12	"
27	Overcast with some fog.....	2 - 10	"
28	Clear to partly cloudy.....	15	"
29	Overcast, light rain.....	2 - 10	"
30	Cloudy.....	20	"
Oct.			
1	Cloudy all day.....	5 - 10	No ice in sight.
2	Partly cloudy.....	20	"
3	".....	15	"
4	Partly cloudy to clear.....	20	"
5	Clear to partly cloudy.....	15	"
6	Partly cloudy to overcast.....	15	"
7	Overcast with rain.....	7	"
8	Overcast with rain to clear.....	12	"
9	Partly cloudy.....	20	"
10	Cloudy all day.....	15	"
11	Continuous fog.....	2 - 6	"
12	Overcast with drizzle and light fog.	5	"
13	Thick fog.....	12	"
14	Overcast with snow flurries.....	15 - 5	"
15	Scattered snow flurries.....	10	"
16	Partly cloudy to overcast, snow flurries.	15	"
17	Cloudy.....	15	"
18	Partly cloudy to cloudy.....	20	"
19	Overcast.....	15	"
20	Cloudy with snow flurries.....	5 - 15	"
21	Light snow.....	2 - 15	"
22	Clear to partly cloudy.....	20	"
23	Overcast with rain.....	2 - 15	"
24	Snow flurries and drizzle.....	4 - 15	"
25	Overcast with snow flurries.....	2 - 6	"
26	Cloudy with snow flurries.....	15	"
27	Overcast with snow.....	15 - 2	River frozen over three miles from mouth, slob ice drifting with tide.
28	Partly cloudy to cloudy, light ground drift all day.	2 - 15	No ice in sight.
29	Partly cloudy to clear.....	15	River frozen three miles above mouth.
30	Heavy snow all day.....	$\frac{1}{2}$ 5	Open water extends up river for three miles.
31	Cloudy.....	15	Ice unobserved.
Nov.			
1	Partly cloudy to cloudy.....	15	Ice unobserved.
2	Snow.....	$\frac{1}{2}$	Open water extends up river for 3 miles.
3	Overcast, heavy ground drift.....	15 - 2	Open water extends up river for 3 miles.
4	Clear.....	15	Open water extends up river for 3 miles.
5	Partly cloudy.....	15	Open water extends up river for 3 miles.
6	Drifting snow.....	$\frac{1}{2}$ 15	Ice unchanged.
7	Cloudy, light ground drift.....	5 - 15	River ice same.
8	Clear.....	15	Large body slob ice in river.
9	Partly cloudy with light fog.....	5 - 15	No ice in sight.
10	Snow all day.....	$\frac{1}{2}$ - 2	"



PORT CHURCHILL METEOROLOGICAL REPORT, 1938—*Cont.*

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938 November										
11.....	30.18	20	9	N.	20	W.	18	.....	.08	.....
12.....	29.94	15	5	S.	6	NE.	8	.....	.....	.05
13.....	29.61	23	11	NE.	36	N.	42	.....	.35	.40
14.....	30.03	17	— 8	NW.	28	NW.	20	.....	.....	.....
15.....	29.87	8	—13	W.	12	S.	18	.....	.....	.....
16.....	29.10	19	— 2	S.	30	S.	18	.....	Trace	.05
17.....	29.38	24	0	NW.	38	NW.	36	.....	.....	.....
18.....	29.66	1	— 6	NW.	36	NW.	34	.....	.....	.....
19.....	29.85	0	— 6	NW.	28	NW.	24	.....	.....	.....
20.....	30.24	— 4	—10	NW.	22	W.	22	.....	.....	.....
21.....	30.16	0	— 8	W.	20	NW.	30	.....	.....	.....
22.....	30.19	— 1	— 8	NW.	22	N.	24	.....	.....	.....
23.....	30.35	— 1	—10	NW.	24	W.	8	.....	Trace	.....
24.....	30.10	— 4	—19	S.	6	S.	6	.....	.....	.....
25.....	30.27	0	—12	S.	6	NW.	12	.....	.....	.....
26.....	29.87	10	— 4	W.	8	W.	16	.....	.....	Trace
27.....	29.97	12	— 2	NW.	44	NW.	32	.....	.01	.....
28.....	29.93	2	— 6	NW.	10	N.	14	.....	.....	.....
29.....	29.98	0	—11	W.	12	S.	10	.....	.....	.04
30.....	30.13	3	— 8	W.	6	S.	6	.....	.01	.....

## CHESTERFIELD INLET METEOROLOGICAL REPORT, 1938

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938 July										
1.....	30.00	45	34	S.	14	S.	16			
2.....	29.73	40	35	S.	20	S.	14			
3.....	29.80	54	34	N.	12	N.	14		.08	
4.....	30.07	58	42	NW.	12	S.	Lt.			
5.....	30.04	61	37	N.	Lt.	E.	Lt.			
6.....	30.03	47	39	NE.	6	S.	Lt.			
7.....	29.99	55	37	N.	6	Calm			.01	
8.....	29.93	64	43	NW.	8	S.	6			
9.....	29.88	74	39	W.	Lt.	SW.	14			
10.....	29.84	61	40	S.	14	E.	10			.16
11.....	29.92	49	40	NE.	16	E.	10	8	.02	
12.....	29.89	72	42	NW.	10	NW.	20			
13.....	29.76	71	54	N.	14	NW.	14			
14.....	29.60	69	45	Calm		S.	12			
15.....	29.65	53	42	S.	8	Calm			.08	.01
16.....	29.73	54	41	E.	6	S.	Lt.			
17.....	29.72	51	41	NE.	12	E.	18	12	.01	.10
18.....	29.97	61	39	E.	16	N.	Lt.	3	.08	
19.....	29.72	69	48	N.	12	N.	10			
20.....	29.82	73	52	N.	12	N.	12			
21.....	29.81	72	53	W.	16	NW.	10			
22.....	29.78	68	53	W.	12	W.	12			
23.....	29.82	62	55	N.	Lt.	S.	10			
24.....	29.64	64	53	NW.	12	N.	10			

PORT CHURCHILL METEOROLOGICAL REPORT, 1938—*Conc.*

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
Nov.			
11	Snow early a.m., clear rest of day.	15	Drift ice in bay.
12	Cloudy with moderate snow from noon.	$\frac{1}{2}$ - 6	River ice unchanged.
13	Heavy drifting snow.....	0	
14	Partly cloudy.....	15	Bay ice to horizon, river ice to mouth of river.
15	Clear.....	15	River frozen, much broken ice in bay.
16	Overcast with light snow and drift.	200 yds.- 6 miles.	Ice in river and bay broken up.
17	Partly cloudy, heavy ground drift.	1	
18	Clear, heavy ground drift.....	$\frac{1}{2}$	Unable observe ice conditions.
19	Clear all day, ground drift.....	1	
20	Clear.....	15	River open two miles from mouth, bay ice to horizon.
21	Partly cloudy to clear.....	15	Ice unchanged.
22	Clear to cloudy with light ground drift.	8 - 10	River frozen, bay ice to horizon.
23	Partly cloudy.....	15	Shore ice to horizon lead to southward.
24	Clear to cloudy.....	15	River open bay ice at horizon.
25	Clear to overcast.....	1	Ice unobserved.
26	Overcast.....	10	Open water in river, bay ice to horizon.
27	Overcast to clear.....	12	Ice to horizon.
28	Clear to cloudy.....	15	No open water visible.
29	Overcast.....	15 - 2	Ice to horizon.
30	Clear to partly cloudy.....	12	River frozen, bay ice broken at river mouth.

## CHESTERFIELD INLET METEOROLOGICAL REPORT, 1938

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
July			
1	Cloudy all day.....	7	Packed ice extends to two miles off shore to south and southeast then open water all directions to horizon.
2	Overcast with rain.....	2 - 4	Packed ice all directions to horizon.
3	Overcast to partly cloudy.....	7	Harbour clear, open water to two miles off shore, then small scattered patches ice.
4	Clear to partly cloudy.....	7	Scattered patches of pan ice as far as visible.
5	" ".....	7	Open water all directions.
6	Partly cloudy to cloudy.....	7	Open water to horizon, few small pans scattered along shore.
7	Overcast to partly cloudy.....	7	No ice in sight.
8	Clear to partly cloudy.....	7	Open water all directions.
9	Partly cloudy to cloudy.....	7	No ice in sight.
10	Overcast.....	1 - 7	"
11	Clear, fog during night.....	300 yds.- 7 miles	"
12	Clear to partly cloudy.....	7	"
13	Clear to partly cloudy.....	7	"
14	Partly cloudy to cloudy.....	7	"
15	Partly cloudy to overcast.....	2 - 7	"
16	Partly cloudy.....	7	"
17	Overcast with rain.....	300 yds.- 7 miles	"
18	Overcast to partly cloudy.....	1 - 7	"
19	Clear.....	7	"
20	Clear to partly cloudy.....	7	"
21	Partly cloudy.....	7	"
22	Cloudy.....	7	"
23	Partly cloudy all day.....	7	"
24	Overcast.....	6	"

CHESTERFIELD INLET METEOROLOGICAL REPORT, 1938—*Cont.*

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog.	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938										
July										
25.....	29.78	61	45	N.	12	NW.	14			
26.....	29.64	76	45	S.	12	N.	12			
27.....	29.49	51	43	E.	12	Calm		3		.12
28.....	29.74	70	43	NW.	6	W.	12			
29.....	29.74	70	45	N.	18	NW.	8			
30.....	29.71	54	40	E.	Lt.	N.	8		.12	.12
31.....	29.54	61	40	W.	10	SW.	24			
August										
1.....	29.42	54	48	W.	8	NW.	14		.12	
2.....	29.65	54	43	NW.	8	S.	12			
3.....	29.68	56	43	SW.	16	SW.	24		Trace	.02
4.....	29.66	50	40	S.	12	E.	8		.03	.08
5.....	29.86	45	42	E.	8	E.	8		.04	
6.....	29.95	60	41	N.	10	SW.	8		.03	
7.....	29.93	64	43	W.	12	W.	24			
8.....	29.76	62	45	NW.	22	NW.	26		.02	
9.....	29.68	56	46	NW.	14	NW.	22			.01
10.....	29.68	52	39	NW.	10	NW.	14			.10
11.....	29.72	50	38	NW.	14	NW.	16			
12.....	29.72	52	39	N.	18	S.	Lt.		Trace	
13.....	29.69	52	40	SW.	16					
14.....	29.70	50	38	N.	20	NW.	28		.12	
15.....	29.75	45	40	NW.	10	S.	10			.03
16.....	29.85	48	40	Calm		S.	12	12	.06	
17.....	29.74	56	41	SW.	12	Calm				
18.....	29.94	47	40	S.	Lt.	SE.	10	18		
19.....	30.03	56	39	E.	10	E.	16			
20.....	29.80	48	42	E.	22	E.	22			.16
21.....	29.53	46	40	E.	30	E.	24		.04	
22.....	30.00	48	39	NE.	18	SE.	Lt.			
23.....	29.77	65	40	W.	16	NW.	28			
24.....	29.64	62	40	NW.	20	NW.	14			.14
25.....	29.52	56	41	N.	10	NW.	10		.18	.28
26.....	29.50	45	39	NW.	36	NW.	18		.36	.04
27.....	29.60	48	35	NW.	18	NW.	16			
28.....	29.70	46	36	N.	10	NW.	12			
29.....	29.86	48	36	NW.	16	Calm				
30.....	29.87	46	34	NW.	10	N.	20			
31.....	29.88	48	36	NW.	26	NW.	20			
September										
1.....	29.66	47	34	NW.	10	SE.	10			.14
2.....	29.59	48	34	N.	12	W.	12		.06	
3.....	29.58	47	38	NE.	34	N.	16		.24	.06
4.....	29.89	47	34	NW.	14	W.	10			
5.....	29.87	45	36	W.	6	NW.	20		.01	.01
6.....	30.06	46	37	N.	20	N.	16			Trace
7.....	30.25	44	34	NW.	20	NW.	8			
8.....	29.99	61	43	W.	16	W.	12			
9.....	29.92	54	40	W.	16	E.	14			
10.....	29.99	46	39	SE.	12	S.	20	8		.08
11.....	29.71	42	40	SE.	14	SE.	10	24		.01
12.....	29.71	38	36	SE.	6	E.	6	24	.01	.01
13.....	29.80	46	35	N.	Lt.	N.	8	11		.01
14.....	30.01	46	38			N.	8		Trace	Trace
15.....	30.02	44	33	N.	12	NE.	10			
16.....	30.00	44	34	NE.	16	NE.	14			
17.....	30.05	48	32	NE.	8	W.	16			
18.....	29.70	50	39	SW.	22	N.	24		.01	.14
19.....	29.94	50	43	N.	24	N.	12			
20.....	29.71	52	38	SW.	12	N.	16			.06
21.....	29.56	44	40	N.	16	SW.	16			
22.....	29.39	42	37	NE.	12	NE.	16	2		.02
23.....	29.70	41	36	N.	10	N.	12			Trace
24.....	29.58	42	36	E.	Lt.	S.	18	2	Trace	.01

CHESTERFIELD INLET METEOROLOGICAL REPORT, 1938—*Cont.*

Date	General Weather	Visibility	Ice Conditions
		Miles	
1938			
July			
25	Partly cloudy to overcast.....	7	No ice in sight.
26	Partly cloudy.....	7	"
27	".....	$\frac{1}{2}$ - 6	"
28	Clear to cloudy.....	7	"
29	Overcast.....	7	"
30	Overcast with rain to partly cloudy.	5	"
31	Cloudy.....	7	"
Aug.			
1	Partly cloudy.....	7	No ice in sight.
2	Clear to overcast.....	7	"
3	Overcast.....	5	"
4	Overcast, rain at intervals.....	7	"
5	Overcast all day.....	7	"
6	Partly cloudy.....	7	"
7	".....	7	"
8	Overcast to partly cloudy.....	7	"
9	Overcast with rain to partly cloudy.	7	"
10	Partly cloudy with rain.....	7	"
11	Partly cloudy.....	7	"
12	".....	7	"
13	Overcast with rain.....	4	"
14	Overcast with showers.....	7	"
15	Overcast with rain.....	3	"
16	Fog, clear during p.m.....	0 - 6	"
17	Overcast to clear.....	7	"
18	Fog for 18 hours.....	$\frac{1}{2}$	"
19	Clear to partly cloudy.....	7	"
20	Overcast with rain.....	7	"
21	Clear all day.....	10	"
22	Partly cloudy to clear.....	7	"
23	Partly cloudy.....	7	"
24	Rain.....	7	"
25	Intermittent rain.....	4 - 7	"
26	Overcast to clear.....	3 - 7	"
27	Partly cloudy.....	7	"
28	".....	7	"
29	".....	7	"
30	Cloudy to overcast.....	7	"
31	Partly cloudy.....	7	"
Sept.			
1	Overcast, intermittent rain.....	4 - 7	No ice in sight.
2	Partly cloudy.....	7	"
3	Rain at intervals with hail.....	2 - 7	"
4	Partly cloudy.....	7	"
5	Overcast with drizzle to partly cloudy.	2 - 7	"
6	Overcast to partly cloudy.....	5 - 7	"
7	Partly cloudy.....	7	"
8	".....	7	"
9	Clear to overcast.....	$\frac{1}{2}$ - 7	"
10	Overcast with fog, rain.....	1	"
11	Dense fog.....	1	"
12	".....	1	"
13	Fog during a.m. then clearing.....	1 - 7	"
14	Cloudy with trace of rain.....	7	"
15	Clear.....	7	"
16	Partly cloudy.....	10	"
17	Clear to partly cloudy.....	10	"
18	Overcast to partly cloudy.....	7	"
19	Partly cloudy.....	7	"
20	Overcast.....	5 - 7	"
21	".....	7	"
22	Fog and rain.....	1 - 5	"
23	Partly cloudy to overcast.....	7	"
24	Rain and fog.....	7	"



CHESTERFIELD INLET METEOROLOGICAL REPORT, 1938—*Cont.*

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938										
September										
25.....	29.15	42	36	Calm	.....	E.	24	3	.01	.10
26.....	29.58	32	28	NE.	26	.....	.....	.....	.....	.....
27.....	29.62	44	29	W.	10	W.	12	.....	.....	.....
28.....	29.72	42	37	NW.	8	N.	12	.....	.02	.02
29.....	29.97	40	32	NE.	18	NE.	12	.....	.....	.....
30.....	30.11	40	26	Calm	.....	SW.	20	.....	.....	.....
October										
1.....	29.53	44	35	SW.	36	N.	14	.....	.....	.28
2.....	29.74	43	34	N.	30	NW.	22	.....	.07	.....
3.....	29.97	33	28	NW.	24	NW.	26	.....	Trace	Trace
4.....	30.43	32	24	N.	24	N.	14	.....	.....	.....
5.....	30.23	39	24	W.	12	W.	16	.....	.....	.....
6.....	29.86	39	35	W.	12	NW.	Lt.	.....	.....	.....
7.....	29.95	37	24	NE.	22	E.	12	.....	Trace	.....
8.....	29.54	37	24	S.	20	NW.	18	.....	.....	.33
9.....	29.64	36	31	.....	.....	W.	10	.....	.....	.....
10.....	29.68	28	24	E.	12	E.	18	.....	.02	.06
11.....	29.75	29	23	E.	14	SE.	26	.....	.02	.....
12.....	29.48	34	23	SE.	28	SE.	32	.....	.....	Trace
13.....	29.06	38	34	S.	26	S.	Lt.	9	.46	.03
14.....	29.07	36	32	Calm	.....	E.	16	21	.04	.04
15.....	29.21	36	33	E.	20	N.	26	.....	.22	.01
16.....	29.51	34	27	NW.	30	N.	30	.....	.....	.....
17.....	29.89	30	25	N.	28	N.	28	.....	.....	.....
18.....	29.91	25	22	N.	24	NW.	18	.....	.....	.....
19.....	29.83	29	18	N.	10	NE.	12	.....	.....	.....
20.....	29.90	30	24	NE.	14	NE.	18	.....	.....	.....
21.....	29.88	30	20	E.	10	NE.	12	.....	.....	.....
22.....	29.51	34	21	NW.	12	NE.	10	.....	.....	.....
23.....	29.56	18	12	E.	24	NE.	18	.....	.....	.....
24.....	29.55	18	10	N.	22	NE.	16	.....	.....	.....
25.....	29.45	10	0	NE.	20	NE.	18	.....	.....	.....
26.....	29.49	10	2	N.	22	N.	22	.....	.....	.....
27.....	29.65	10	6	N.	18	N.	14	.....	Trace	.....
28.....	29.86	8	2	N.	20	N.	18	.....	.....	.....
29.....	30.01	10	1	NW.	12	NW.	12	.....	.....	.....
30.....	29.97	2	- 2	NE.	20	NE.	20	.....	.....	.....
31.....	30.25	2	- 1	N.	20	N.	20	.....	.....	.....
November										
1.....	30.29	14	- 3	NW.	8	SW.	10	.....	.....	Trace
2.....	30.00	20	14	SW.	14	S.	16	.....	.....	Trace
3.....	29.24	30	26	SE.	30	SE.	30	.....	.44	.06
4.....	29.10	29	22	E.	18	NE.	22	.....	.06	.....
5.....	29.49	28	25	S.	16	S.	10	.....	.02	.....
6.....	29.71	28	20	E.	14	E.	20	.....	.....	.....
7.....	29.98	20	0	NE.	16	N.	16	.....	.....	.....
8.....	30.03	24	- 5	Calm	.....	S.	8	.....	Trace	.....
9.....	29.94	26	15	S.	26	E.	14	.....	.08	.02
10.....	30.20	17	10	E.	12	E.	8	.....	.....	.01
11.....	30.00	17	8	E.	14	N.	10	.....	.02	.04
12.....	29.90	10	4	N.	8	E.	8	.....	.01	.02
13.....	29.74	- 6	-19	NE.	6	NW.	14	.....	.04	.....
14.....	29.77	- 4	-20	N.	12	NW.	16	.....	.....	.....
15.....	29.68	6	-10	W.	10	S.	16	.....	.....	.....
16.....	29.03	25	6	W.	6	S.	18	.....	.08	.12
17.....	29.04	24	0	W.	Lt.	NW.	28	.....	.06	.04
18.....	29.20	20	- 4	NW.	28	N.	26	.....	.....	.02
19.....	29.55	14	- 8	NW.	26	NW.	26	.....	.08	.....
20.....	29.80	- 8	-26	NW.	28	W.	12	.....	.....	.....
21.....	29.93	-20	-30	W.	8	NW.	12	.....	.....	.....
22.....	30.04	-12	-25	NW.	10	NW.	12	.....	.....	.....
23.....	30.06	-12	-20	NW.	12	Calm	.....	.....	.....	.....
24.....	29.99	- 4	-22	NW.	10	NW.	16	.....	.....	.02

CHESTERFIELD INLET METEOROLOGICAL REPORT, 1938—*Cont.*

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
Sept.			
25	Intermittent rain with fog.....	3 - 5	No ice in sight.
26	Overcast to partly cloudy.....	7	"
27	Cloudy.....	7	"
28	".....	7	"
29	Partly cloudy to overcast.....	7	"
30	Partly cloudy.....	7	"
Oct.			
1	Overcast with rain.....	3	No ice in sight.
2	".....	3 - 7	"
3	Partly cloudy to overcast, snow flurries.	3 - 7	"
4	Overcast to clear.....	7	Ice forming on lakes.
5	Clear to cloudy.....	7	No ice in sight.
6	Overcast.....	7	"
7	Overcast to partly cloudy.....	7	"
8	Overcast, rain and snow all day..	2 - 5	"
9	Overcast to partly cloudy.....	5 - 7	"
10	Overcast with snow.....	13	Lakes frozen over.
11	Partly cloudy to overcast.....	7	"
12	Overcast, trace of rain.....	3	No ice in sight.
13	Fog and rain.....	1 - 4	"
14	Fog all day, rain and snow.....	1 - 2	"
15	Overcast with intermittent rain..	2 - 7	"
16	Overcast.....	3 - 7	"
17	".....	7	Lakes frozen over.
18	Partly cloudy.....	7	No ice in sight.
19	".....	7	"
20	Cloudy to clear.....	7	"
21	Partly cloudy to overcast.....	7	"
22	Overcast.....	7	"
23	Partly cloudy.....	7	Salt water ice forming along shore.
24	Overcast to partly cloudy, trace of snow.	7	No ice in sight.
25	Overcast to partly cloudy.....	7	Ice along shore.
26	Cloudy.....	7	"
27	Overcast, trace of snow.....	7	"
28	Cloudy, trace of snow.....	7	"
29	Cloudy.....	7	"
30	Partly cloudy.....	7	Cove full slob ice.
31	Cloudy.....	7	"
Nov.			
1	Cloudy, trace of snow.....	5	Cove full of slob ice.
2	Overcast with trace of rain.....	2 - 5	Cove full of loose ice.
3	Overcast with rain and sleet, changing to snow.	1 - 3	Loose ice in cove.
4	Overcast.....	1 - 3	Cove half full loose ice.
5	".....	1 - 5	Slob ice extending mile off shore.
6	".....	5	Cove half full slob ice.
7	Overcast, partly cloudy.....	5	Strings loose slob ice extends mile off shore.
8	Overcast with trace of snow.....	5	Loose slob ice extending two miles from shore.
9	Overcast with snow.....	1 - 5	Ice conditions same.
10	".....	5	Slob ice to horizon.
11	Snow all day.....	2	Loose slob ice to horizon.
12	Overcast with light snow.....	2 - 5	Close packed ice to horizon.
13	Clear to cloudy.....	2 - 5	Cove frozen and close packed ice to horizon.
14	Clear.....	5	Close packed ice to horizon.
15	Partly cloudy.....	8	No open water.
16	Light snow all day.....	3	Harbour solid ice, loose ice outside to horizon.
17	Overcast, light ground drift.....	2	Open water, few strings outside.
18	".....	1	Ice along shore.
19	Partly cloudy, moderate drift....	1 - 3	Ice forming in harbour.
20	Clear, light drift.....	3	Harbour freezing over.
21	Clear.....	3	Harbour frozen.
22	".....	5	Ice extending two miles from shore.
23	".....	5	Open water four miles off shore.
24	Clear to cloudy.....	2	Ice to horizon.

CHESTERFIELD INLET METEOROLOGICAL REPORT, 1938—*Cont.*

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938										
November										
25.....	30.04	6	-10	W.	10	W.	14			.06
26.....	29.54	8	2	W.	10	Calm			.01	.36
27.....	29.70	4	-13	NW.	28	N.	28		.04	
28.....	29.96	-10	-23	N.	14	NW.	14			
29.....	29.90	-20	-25	W.	16	NW.	10			
30.....	30.12	-20	-26	W.	12	W.	6			

## PORT HARRISON METEOROLOGICAL REPORT, 1938

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog.	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938 July										
1	30.22	64	38	NE.	12	E.	6			
2	30.21	63	49	S.	18	S.	Lt.			
3	30.01	60	49	S.	24	S.	30			.04
4	29.97	41	33	SW.	24	N.	12	20	.16	Trace
5	30.09	58	39	N.	24	N.	18		Trace	
6	29.99	59	40	N.	12	N.	18			
7	29.99	56	39	N.	6	N.	12			
8	29.91	57	38	NW.	12	N.	6			
9	29.96	59	40	N.	18	N.	24			
10	30.11	53	40	N.	Lt.	SW.	12			
11	29.92	55	44	S.	18	NW.	6			
12	29.68	61	46	N.	6					
13	29.71	59	46	N.	12	NW.	12		.08	
14	29.69	52	39	NW.	6	SW.	12		.01	
15	29.66	54	43	SW.	24	S.	18	7		
16	29.62	66	49	NE.	24	S.	12			
17	29.74	52	42	NW.	18	W.	12	1		
18	29.84	57	37	S.	12	S.	12	5		.01
19	29.75	56	47	S.	Lt.	W.	6	5	.10	
20	29.51	64	50	NE.	18	NW	30		.04	.02
21	29.83	58	47	NW.	18	W.	12			
22	29.91	51	43	SW.	10	SW.	12	5	.04	.18
23	29.83	60	41	S.	6	S.	18	13	Trace	
24	29.52	56	45	NE.	6	W.	6	24	14	.06
25	29.66	66	43	NW.	12	NW.	18			
26	29.88	58	45	SW.	6	W.	18	10	.01	
27	29.95	50	43	W.	12	S.	18	8		
28	29.84	56	47	S.	30	S.	18			
29	29.75	61	47	SW.	8	N.	12			
30	29.69	66	44	NE.	12	S.	18			
31	29.63	51	44	W.	24	NW.	26	12	.64	
August										
1	29.82	52	39	W.	Lt.	S.	12			
2	29.70	58	37	S.	6	W.	14			.02
3	29.88	58	40	N.	6	NE.	24		.06	
4	29.57	61	44	W.	24	NE.	30			
5	29.70	60	50	NE.	20	W.	12			
6	29.72	64	43	NE.	12	N.	18			Trace
7	29.95	61	44	N.	18	NW.	16			
8	30.02	54	44	W.	8	SW.	18			Trace
9	29.89	54	45	W.	12	SW.	12	24	.18	
10	29.63	54	45	SW.	12	N.	18		.06	.08
11	29.81	50	38	W.	6	W.	18			
12	29.78	48	44	W.	6	NW.	6			Trace
13	29.79	53	40	NW.	Lt.	S.	6			Trace
14	29.34	56	46	SE.	12	N.	30		16	.08

CHESTERFIELD INLET METEOROLOGICAL REPORT, 1938—*Cont.*

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
Nov.			
25	Clear to overcast.....	2 - 5	Open water off shore.
26	Overcast with snow.....	2	Ice to horizon.
27	Partly cloudy, gale and heavy drift.	1	"
28	Clear.....	5	Ice extending two miles from shore.
29	Partly cloudy.....	5	Ice extending three miles from shore.
30	Clear.....	5	Ice extends three miles.

## PORT HARRISON METEOROLOGICAL REPORT, 1938

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
July			
1	Clear all day.....	14 - 71	No ice in sight.
2	Cloudy.....	19	"
3	Clear to overcast.....	2 - 19	"
4	Overcast, foggy.....	$\frac{1}{2}$ - 19	"
5	Cloudy to clear.....	19	"
6	Overcast to clear.....	19	"
7	".....	19	"
8	Cloudy to clear.....	19	"
9	".....	19	"
10	Partly cloudy to overcast.....	19	"
11	Cloudy to overcast.....	10	"
12	Clear to overcast.....	2 - 19	"
13	Overcast to partly cloudy.....	20	"
14	Foggy with fog to clear.....	0 - 20	"
15	Overcast, fog.....	7 - 20	"
16	Partly cloudy to overcast.....	20	"
17	Overcast.....	1 - 19	"
18	Clear to overcast.....	2 - 20	"
19	Overcast.....	0 - 7	"
20	Overcast to clear.....	19	"
21	Partly cloudy to clear.....	20	"
22	Overcast all day.....	0 - 7	"
23	Partly cloudy to cloudy.....	0 - 20	"
24	Fog all day.....	0 - 1	"
25	Cloudy to clear.....	20	"
26	Cloudy all day.....	0 - 20	"
27	Cloudy.....	1 - 20	"
28	Clear to overcast.....	4 - 20	"
29	Cloudy to clear.....	20	"
30	Clear to overcast.....	20	"
31	Partly cloudy, with fog.....	0 - 20	"
Aug.			
1	Clear to overcast.....	20	No ice in sight.
2	".....	1 - 20	"
3	Cloudy to clear.....	20	"
4	Clear to overcast.....	7 - 20	"
5	Overcast.....	20	"
6	Partly cloudy to overcast.....	20	"
7	Partly cloudy to clear.....	20	"
8	Clear to overcast.....	20	"
9	Fog all day.....	0	"
10	Overcast with showers.....	4 - 20	"
11	Cloudy.....	20	"
12	Overcast.....	7 - 20	"
13	Clear to overcast.....	4 - 20	"
14	Overcast.....	4 - 20	"



PORT HARRISON METEOROLOGICAL REPORT, 1938—*Cont.*

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog.	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938										
August										
15.	29.85	51	41	NW.	18	W.	18		.12	Trace
16.	30.09	51	42	W.	12	W.	18			
17.	30.08	61	40	S.	16	Calm				
18.	29.92	64	46	NW.	12	E.	6			.01
19.	30.06	64	48	S.	12				.07	
20.	29.89	71	48	NE.	Lt.	W.	18			
21.	29.50	68	51	S.	18	S.	12	5	.22	
22.	29.65	56	48	W.	Lt.	E.	24	8	.12	.18
23.	29.91	51	37	E.	12	W.	18			
24.	29.77	53	44	W.	12	NW.	18		Trace	Trace
25.	29.67	54	44	SW.	24	SW.	18			.20
26.	29.60	51	44	NW.	20	W.	12		.06	.08
27.	29.76	53	41	NW.	20	W.	18		.04	.01
28.	29.39	47	41	S.	30	S.	36		.15	.80
29.	29.42	47	41	W.	36	NW.	36		.16	.24
30.	29.75	47	39	W.	30	W.	24		.20	.02
31.	29.73	47	39	W.	18	W.	18		.04	Trace
September										
1.	29.72	48	39	NW.	14	W.	12		.04	
2.	29.37	47	39	S.	18	N.	42		.06	.68
3.	29.45	45	37	N.	12	S.	18		.07	.02
4.	29.57	47	39	E.	24	N.	24		.16	.01
5.	29.90	48	39	N.	14	N.	14			Trace
6.	29.70	47	39	N.	12	N.	26		.04	
7.	29.99	45	38	N.	30	N.	26		.09	Trace
8.	30.32	44	38	N.	12	W.	18		.01	
9.	30.10	49	39	W.	24	W.	18		Trace	
10.	30.02	43	39	Calm		S.	8		.06	.01
11.	29.70	54	44	E.	12	S.	18			
12.	29.52	52	45	S.	12	S.	Lt.		.25	.01
13.	29.55	47	44	W.	6	W.	6	12	.01	
14.	29.60	45	40	N.	6	N.	18	8	.01	.02
15.	29.60	43	37	N.	12	N.	18		.03	.02
16.	29.66	40	37	N.	18	N.	14		.03	.02
17.	30.05	44	36	W.	12	W.	12		.05	
18.	30.22	44	38	W.	12	W.	10			
19.	29.98	52	40	S.	10	N.	14			
20.	30.08	45	38	N.	10	W.	12		Trace	
21.	29.78	48	41	S.	24	SW.	20			
22.	29.38	46	40	NW.	Lt.	N.	6	8		.01
23.	29.39	49	40	W.	6	N.	10	24	.03	.04
24.	29.85	44	36	N.	18	W.	8		.05	Trace
25.	29.54	46	39	S.	18	S.	30			
26.	29.10	48	37	W.	24			10	.02	
27.	29.73	39	32	NE.	12	N.	8			
28.	30.01	40	32	E.	Lt.	W.	8			
29.	29.95	43	36	W.	24	W.	20		.06	.39
30.	29.98	43	34	SW.	14	N.	18		.05	.13
October										
1.	30.13	37	29	N.	6	W.	6			
2.	29.82	43	36	S.	32	NW.	24	8		.04
3.	30.07	42	36	W.	10	W.	14		.02	.06
4.	30.09	40	30	N.	8	N.	14		.08	.08
5.	30.45	38	30	N.	16	NW.	14			
6.	30.22	41	31	W.	22	W.	24			
7.	29.81	42	38	W.	18	S.	6			.01
8.	29.81	41	36	E.	14	Calm			.09	
9.	29.70	43	37	W.	22	N.	16	8		.03
10.	29.92	39	33	N.	Lt.	S.	18			
11.	29.64	46	38	S.	6	E.	6			Trace
12.	29.44	46	38	E.	14	S.	Lt.	12	.22	

PORT HARRISON METEOROLOGICAL REPORT, 1938--*Cont.*

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
Aug.			
15	Partly cloudy.....	7 - 20	No ice in sight.
16	Clear to partly cloudy.....	20	"
17	Clear.....	20	"
18	Overcast all day.....	4 - 20	"
19	Partly cloudy.....	7 - 20	"
20	Cloudy to overcast.....	20	"
21	Partly cloudy.....	2 - 7	"
22	Overcast with rain.....	1 - 20	"
23	Partly cloudy.....	7 - 20	"
24	Overcast.....	10 - 20	"
25	Overcast, rain during p.m.....	2 - 20	"
26	Overcast.....	4 - 20	"
27	Cloudy.....	20	"
28	Overcast.....	2	"
29	Rain.....	2 - 4	"
30	Overcast with showers.....	4 - 20	"
31	Overcast with rain.....	7 - 20	"
Sept.			
1	Cloudy to overcast, drizzle during day.	7 - 20	No ice in sight.
2	Overcast.....	2 - 20	"
3	Overcast with drizzle.....	7 - 19	"
4	Cloudy to partly cloudy.....	4 - 20	"
5	Overcast to partly cloudy.....	15 - 20	"
6	Overcast, intermittent rain.....	2 - 6	"
7	Overcast with drizzle.....	2 - 6	"
8	Overcast.....	4 - 6	"
9	Overcast to partly cloudy.....	2 - 6	"
10	Drizzle during a.m., overcast during p.m.	$\frac{1}{2}$ - 6	"
11	Partly cloudy.....	20 - 12	"
12	Mostly fair.....	1 - 0	"
13	Overcast all day.....	3 miles-	"
14	Overcast, fog during a.m.....	100 yds.	"
15	Overcast intermittent showers.....	3 - $\frac{1}{2}$	"
16	Overcast intermittent showers.....	1 - 3	"
17	Overcast to partly cloudy.....	2 - 4	"
18	Overcast to partly cloudy.....	8 - 10	"
19	Cloudy to clear.....	20	"
20	Partly cloudy to overcast.....	3 - 12	"
21	Cloudy to clear.....	1 - 15	"
22	Partly cloudy to overcast.....	6	"
23	Overcast, dense fog, showers.....	0 - 6	"
24	Overcast, fog and rain all day.....	$\frac{1}{2}$ - 4	"
25	Overcast.....	10	"
26	Overcast.....	6	"
27	Overcast and fog, intermittent rain.	1 - 6	"
28	Partly cloudy.....	10	"
29	Mostly overcast.....	12	"
30	Rain during day.....	2 - 5	"
	".....	2 - 10	"
Oct.			
1	Partly cloudy.....	20	No ice in sight.
2	Intermittent rain and drizzle with fog.	1 - 5	"
3	Overcast with intermittent rain..	2 - 10	"
4	Intermittent snow throughout the day.	2 - 6	"
5	Overcast to partly cloudy.....	10	"
6	Overcast.....	10	"
7	Overcast with drizzle.....	1 - 8	"
8	Cloudy to overcast.....	10	"
9	Intermittent rain and fog.....	$\frac{1}{2}$ - 8	"
10	Overcast all day.....	8	"
11	".....	4	"
12	Overcast with thunderstorm then dense fog.	6 - 0	"

PORT HARRISON METEOROLOGICAL REPORT, 1938—*Contc.*

Date	Mean Baro- meter	Air Temp.		Wind, 8 a.m.		Wind, 8 p.m.		Hours of Fog.	Precipitation	
		Max.	Min.	Dir.	Vel.	Dir.	Vel.		Rain or Snow	
									8 a.m.	8 p.m.
1938 October										
13.....	29.24	52	40	S.	17	W.	12		.01	.28
14.....	29.30	47	40	S.	20	W.	30		.08	.07
15.....	29.47	42	35	SW.	26	W.	28		.03	.10
16.....	29.72	42	33	W.	30	W.	14		.08	.01
17.....	29.85	38	33	W.	24	NW.	20		.02	.05
18.....	29.86	37	33	W.	14	NW.	14		.11	.16
19.....	29.54	34	28	NW.	6	N.	Lt.		.01	.01
20.....	29.45	32	27	N.	Lt.	N.	12		.01	Trace
21.....	29.53	32	24	N.	8	N.	6		Trace	.01
22.....	29.72	38	28	N.	Lt.	W.	18	7	.01	.12
23.....	29.30	39	30	W.	36	NE.	24		.04	.08
24.....	29.41	31	23	E.	10	E.	Lt.			
25.....	29.22	28	17	E.	Lt.	N.	12		.04	.02
26.....	29.32	28	19	N.	Lt.	N.	6			.04
27.....	29.64	32	18	S.	10	N.	12			.04
28.....	29.34	32	23	S.	18	N.	30		.10	.85
29.....	30.14	28	10	N.	6	W.	18			.02
30.....	29.86	34	26	W.	22	SW.	42		.12	.20
31.....	30.04	22	18			N.	12			
November										
1.....	30.37	24	18	N.	12	N.	8		Trace	.01
2.....	30.44	30	12	Calm		S.	24		.01	.07
3.....	29.44	39	22	S.	32	W.	30		.01	.28
4.....	29.56	34	31	W.	30	W.	36			Trace
5.....	29.55	34	31	S.	8	E.	30			.08
6.....	29.36	36	30	W.	46	E.	42		.12	.02
7.....	29.74	32	29	W.	36	W.	22		.12	.03
8.....	29.86	32	21	N.	16	E.	24		.15	Trace
9.....	29.35	26	19	E.	36	E.	36			.30
10.....	29.87	27	22	E.	18	E.	20		.30	
11.....	29.78	31	22	E.	Lt.	W.	20		.04	.14
12.....	29.88	28	22	N.	12	W.	14			.02
13.....	29.33	27	20	E.	18	E.	30			
14.....	29.26	22	10	N.	24	N.	12			Trace
15.....	29.56	16	5	E.	Lt.	N.	20			.34
16.....	29.73	28	7	N.	Lt.	S.	24			.04
17.....	29.37	30	20	S.	34	S.	24		.02	.08
18.....	29.45	31	17	W.	30	W.	22		.10	.10
19.....	29.33	24	12	W.	24	N.	12		.04	.30
20.....	29.57	26	— 4	N.	12	N.	12		.02	.05
21.....	29.98	24	10	N.	12	W.	14		.05	.30
22.....	29.81	22	8	E.	Lt.	W.	8			.15
23.....	29.93	19	— 3	N.	Lt.	N.	Lt.			.04
24.....	29.97	14	— 8	N.	Lt.	N.	Lt.			
25.....	30.04	22	8	E.	Lt.	N.	24			.20
26.....	29.85	22	14	W.	34	W.	18			.30
27.....	29.12	24	15	W.	48	W.	46		.05	
28.....	29.26	17	11	N.	30	N.	24			.25
29.....	29.47	18	11	N.	24	N.	30			.12
30.....	29.83	15	—11	E.	6	E.	6			Trace

PORT HARRISON METEOROLOGICAL REPORT, 1938 -*Cont.*

Date	General Weather	Visibility	Ice Conditions
1938		Miles	
Oct.			
13	Overcast with rain, dense fog during p.m.	4 - 0	No ice in sight.
14	Rain.....	2 - 6	"
15	Showers during day.....	6	"
16	Overcast, occasional rain.....	6	"
17	Overcast, with occasional snow squalls.	6	"
18	Intermittent snow and sleet.....	2 - 6	"
19	Overcast with occasional snow...	2 - 10	"
20	Fine weather.....	15	"
21	Overcast, light snow.....	2 - 10	"
22	Overcast, snow and rain.....	1 - 6	"
23	Drizzle rain all day.....	5	"
24	Cloudy.....	15	Ice on edges river.
25	Intermittent snow.....	1 - 8	No ice in sight.
26	Mostly cloudy, with occasional snow flurries.	1 - 8	"
27	Intermittent snow.....	7	"
28	Snow throughout the day.....	1	"
29	Scattered snow flurries.....	6	"
30	Snow during a.m., then turning to rain.	1 - 8	"
31	Overcast with snow flurries.....	8	"
Nov.			
1	Cloudy, scattered snow flurries...	8	No ice in lght.
2	Snow during a.m., then mostly overcast.	8	Slob ice in river.
3	Rain all day.....	2 - 5	"
4	Overcast with scattered showers.	8	Three inches ice in river and cove channel open.
5	Overcast, moderate rain.....	2 - 12	Cove frozen over.
6	Light snow all day.....	2	Ice unchanged.
7	Light intermittent snow.....	1 - 8	Slob ice in river.
8	Overcast with snow flurries.....	5 - 12	No ice in sight.
9	Easterly gale with snow.....	$\frac{1}{2}$	Slob ice in river.
10	Overcast.....	10	Drift ice in river.
11	Snow flurries all day.....	1 - 6	Ice in cove, river open.
12	Snow.....		Ice conditions unchanged.
13	Overcast all day.....	4 - 8	Ice unchanged.
14	Mostly cloudy, light snow late p.m.	2 - 15	"
15	Intermittent snow.....	1 - 10	"
16	".....	1 - 10	Ice on cove 4 inches thick, slob ice in river.
17	Overcast with intermittent snow.	1 - 7	Ice unchanged.
18	Intermittent snow with drift.....	1 - 6	River frozen over with slob ice.
19	Snow.....	$\frac{1}{2}$ - 8	Ice unchanged.
20	Intermittent snow.....	1 - 8	Ice drifting out of river.
21	Cloudy with intermittent snow....	$\frac{1}{2}$ - 10	Ice unchanged.
22	Intermittent snow.....	$\frac{1}{2}$ - 6	"
23	Cloudy with snow.....	10	River frozen as far as Harrison.
24	Mostly cloudy, light snow.....	2 - 10	Ice unchanged.
25	Intermittent snow with drift.....	$\frac{1}{2}$ - 8	"
26	Intermittent snow.....	$\frac{1}{4}$ - 6	"
27	Low drift all day.....	$\frac{1}{4}$	"
28	Intermittent snow storm with drift.	$\frac{1}{2}$ - 1	"
29	Drift storm all day.....	200 yds.	"
30	Fine and clear during day.....	2 - 20	"



# AIDS TO NAVIGATION IN HUDSON BAY AND STRAIT

## RADIO COAST AND DIRECTION FINDING STATIONS

Station	Call Sign	Calling Wave		Working Wave		Position		Hours of Service	Weather Forecast Broadcast (a)	Coast Charge (b)
		(See footnote) K/cs.	Metres	K/cs.	Metres	Latitude N.	Longitude W.			
Port Churchill.....	V A P	500	600	500	600	58° 46' 32"	94° 10' 31"	Continuous during season of navigation.	11.00 a.m. and 11.00 p.m. E.S.T.	6c. per word
Chesterfield Inlet.....	V B Z	500	600	500	600	63° 20' 05"	90° 42' 33"	Continuous during season of navigation.	.....	6c. per word
Nottingham Island.....	V C B	500	600	420	715	63° 06' 48"	77° 56' 18"	Continuous during season of navigation.	.....	6c. per word
Cape Hopes Advance.....	V A Y	500	600	405	740	61° 05' 12"	69° 33' 24"	Continuous during season of navigation.	.....	6c. per word
Resolution Island.....	V A W	500	600	405	740	61° 18' 30"	64° 53' 24"	Continuous during season of navigation.	11.20 a.m. and 11.20 p.m., E.S.T.	6c. per word

All stations maintain watch on 500K/cs. (600 metres) and with the exception of Resolution island, take and transmit bearings on 375 K/cs. (800 metres) after communication has been established on 500 K/cs. (600 metres). Resolution island will take bearings on 500 K/cs. (600 metres) and transmit bearings on 375 K/cs. (800 metres).

(a) Forecast covers area of Hudson bay, Hudson strait and that portion of the North Atlantic adjacent thereto.

(b) All messages relative to navigation are handled free of charge. A six-cent per word coast charge applies to all other traffic. For forwarding charges beyond Port Churchill apply to any of above stations or see Canada Rate Sheet, International List of Coast and Ship Stations.

## HUDSON STRAIT PATROL SHIP

Station	Call Sign	Calling Wave		Working Wave		Hours of Service	Remarks
		K/cs.	Metres	K/cs.	Metres		
C.G.S. N.B. <i>McLean</i> .....	C G S N	500	600	425	705	Continuous during season of navigation.	This vessel patrols Hudson strait during the season of navigation. Information in regard to her position may be obtained from any Radio Station in the Strait.

# PORT HARRISON METEOROLOGICAL REPORTING STATION

Station	Call Sign	Calling Wave		Working Wave		Position		Hours of Service	Coast Charge
		K/cs.	Metres	K/cs.	Metres	Latitude N.	Longitude W.		
Port Harrison.....	V A L	500	600	417	720	58° 27' 17"	78° 08' 29"	Keeps watch on 500 K/cs. (600 metres) for fifteen minute periods commencing at every odd hour from 7.00 a.m. to 7.00 p.m. E.S.T. inclusive, during season of navigation.	6c. per word See note (b) above.

## LIGHTS

Location	Position		Character	Elevation	Remarks
	Latitude N.	Longitude W.			
†Goodwin island, Button islands group.	60° 41' 31"	64° 40' 22"	Flashing.....	250 ft..	On unpainted wooden pole.
Resolution island.....	61° 18' 28"	64° 53' 16"	Flashing.....	129 ft.	White square, wooden lantern on wooden skeleton base. One flash every 10 seconds.
Cape Hopes Advance.....	61° 05' 14"	69° 33' 23"	Fixed.....	270 ft.	On unpainted wooden pole.
†Wales island.....	61° 51' 37"	71° 58' 19"	Flashing.....	150 ft.	On unpainted wooden pole.
†Ashe inlet.....	60° 31' 40"	70° 33' 27"	Flashing.....	191 ft.	On unpainted wooden pole.
†East end of Charles Island.....	62° 36' 40"	73° 56' 09"	Flashing.....	150 ft.	On unpainted wooden pole.
†West end of Charles island.....	62° 42' 30"	74° 40' 00"	Flashing.....	40 ft.	On unpainted wooden pole.
†Nottingham island.....	63° 05' 48"	77° 56' 55"	Flashing.....	50 ft.	On unpainted wooden pole.
†Digges island.....	62° 37' 00"	78° 00' 00"	Flashing.....	65 ft.	On unpainted wooden pole.
†Mansel island.....	62° 27' 00"	79° 38' 00"	Flashing.....	41 ft.	On unpainted wooden pole.
†Coats island.....	62° 10' 00"	83° 08' 00"	Flashing.....	40 ft.	On unpainted wooden pole, surrounded by white lattice.
†Hubbart point.....	59° 21' 00"	94° 40' 00"	Flashing.....	50 ft.	On unpainted wooden pole.

†Unwatched.

C.G.S. *N. B. McLEAN*—HUDSON STRAIT PATROL SHIP

## GENERAL DIMENSIONS AND EQUIPMENT

The C.G.S. *N. B. McLean* is a twin screw ice breaking steamer of 6,500 indicated horse-power and with the following leading dimensions:—

Length (B.P.).....	260 feet
Breadth (moulded).....	60 “
Depth (moulded).....	31 “
Gross tonnage.....	3,253 tons
Fuel oil capacity.....	1,596 “

The vessel is equipped with a patent towing winch furnished with both steel wire and manila towing hawsers, a powerful search light, two 7-ton derricks and two motor launches.

She also carries a diver and complete diving apparatus and the following salvage gear:—

- 1 Drake centrifugal pump, 10 inch.
- 1 Smart Turner centrifugal pump, 8 inch.
- 1 Duplex pump, 6 inch.

These pumps are completely equipped with flexible suction and discharge pipes, foot valves, syphons, etc., and all necessary auxiliaries.

One hundred and fifty feet of bronze flexible steam hose with connections, patching gear, shores, turnbuckles and all necessary tools are also provided.

The vessel is provided with a gyro compass and a recording echo sounder and radiotelegraph and radiotelephone apparatus are installed.

The *N. B. McLean* will be in Hudson Strait from the opening to the close of navigation each year and will maintain constant watch on 500 K/cs. (600 metres), call sign CGSN.

## GLOSSARY OF TERMS USED IN ICE NAVIGATION

- 
- Floe.....A large mass of floating ice.
- Pan.....A small floe or piece of ice that can be forced aside or  
slewed.
- A field.....A large body of ice that may be seen around.
- Land floe.....Ice frozen fast to the shore.
- Packed ice.....Small pieces of ice closed together and held by the pressure  
of ice and currents.
- Ice blink.....A peculiar pale yellow reflection on the sky; indicating the  
presence of ice in the distance.
- The ice pack.....A large body of solid ice extending across the whole sea  
and beyond which it is impossible to advance.
- Slack or open ice....Detached ice that can be worked through. Ice is said to  
be slacking when it begins to be open so as to be navigable.
- A lead.....A strip of navigable water opening into the pack.
- Hummocky ice.....Rough, uneven or thick ice.
- Slob.....Snow afloat and forming into ice.
- Water sky.....A dark or bluish appearance of the sky indicating open  
water beyond the ice pack.
- Rafting.....Occurs when two pans meet with force either by the  
action of the winds or currents—the edges are broken  
off and either rise on top of or pass under the body of the  
pans.
- Growler.....A more or less washed and rounded lump of ice which rolls  
about in the water; formed from broken up bergs or  
detached pieces of heavy old Arctic floe ice.
- Collar ice.....The margin of ice frozen fast to an island or shore, pre-  
sents an abrupt wall against which the floating ice  
rises and falls with the tide.









